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PROCESS AND PRODUCT--A REASSESSMENT OF STUDENTS AND PROGRAM. THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS, REPORT III. FINAL REPORT.
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THIS FINAL REPORT OF A SERIES ELABORATES DATA FROM REPORT I IN SIX INTENSIVE CASE STUDIES OF THREE TYPES OF GIFTED ADOLESCENTS (CREATIVE INTELLECTUAL, STUDIOUS, SOCIAL LEADER) IDENTIFIED BY SELF-REPORT, AND TESTS THE STRENGTH AND DURABILITY OF ATTITUDE CHANGES RESULTING FROM CURRICULUM EXPERIMENTS DESCRIBED IN REPORT II. RESEARCH RELEVANT TO THE CREATIVE INTELLECTUAL STYLE IN BOTH ADULTS AND ADOLESCENTS IS CITED. ASSUMPTIONS THROUGHOUT THIS RESEARCH ARE THAT EDUCATIONAL AIMS FOR GIFTED ADOLESCENTS SHOULD INCLUDE DEVELOPMENT OF IDENTITY, MOTIVATION TO LEARN, AND OPENNESS TO CHANGE. FORMAL AND INFORMAL MEASURES ON TESTS ADMINISTERED ONE YEAR AFTER THEY WERE GIVEN FOR REPORT II EXPERIMENTS SHOWED CONTINUING TRENDS OF ATTITUDE CHANGES TOWARD CREATIVE INTELLECTUALITY FOR ALL POPULATION SUB-GROUPS, BOTH EXPERIMENTAL AND CONTROL, BUT NO APPARENT INCREASE IN PROBLEM-SOLVING SKILLS. THESE RESULTS ARE FURTHER DISCUSSED IN THE CONTEXT OF THE CASE STUDIES, AND IN TERMS OF CONCURRENT SOCIAL TRENDS. (LH)

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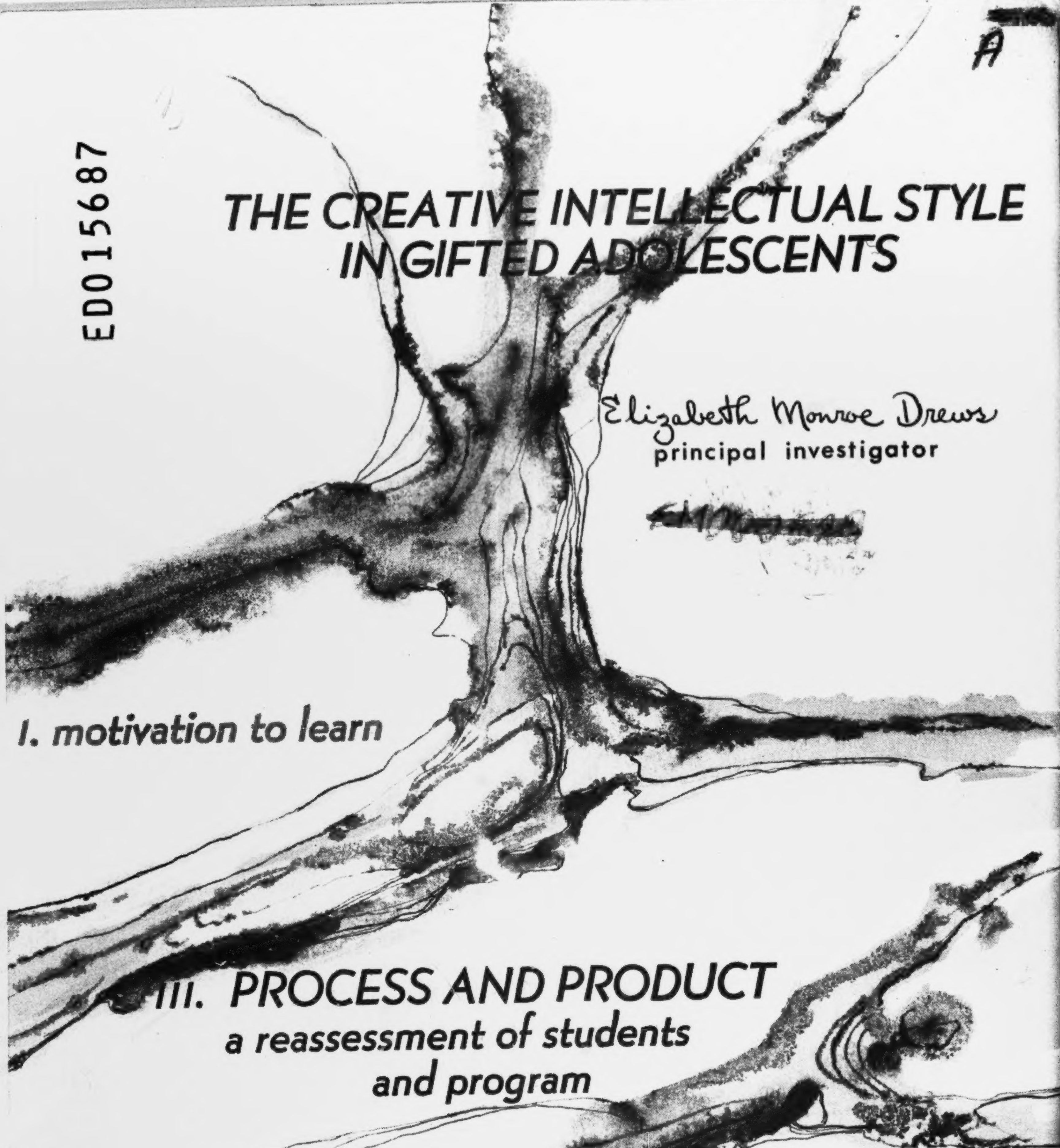

THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS

Elizabeth Monroe Drews
principal investigator

[redacted]

I. motivation to learn

III. PROCESS AND PRODUCT
a reassessment of students and program

II. being and becoming

THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS
Process and Product: A Reassessment of Students and Program

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PREFACE

This is a report which argues that the point has been reached in human affairs where a dramatically new direction in psychology and education is needed. The plea is for further study and research to determine the range and extend the limits of human potential and to combine these explorations with the humanizing of education. Education must begin to take into account the complexity and power of human imagination, intellectual abilities and social needs. I agree with Abraham Maslow that a new image of man is emerging and with Buckminster Fuller that a spirit of change is in the air. The image and the direction is toward "being and becoming". As educators we must be aware of our responsibility for the directions of this change and do everything within our power to allow this more positive image of man to flourish and grow. For this to happen, education must be transformed and humanized. I also feel this means that both research and the reports for its communication must take on new forms. The present report is an exploration in these uncharted regions.

The critical reader with a developed taste for what is known as the research style (I assume this is comparable to becoming fond of olives or oysters) may find what I write out of step and out of style if measured against the well-organized brevity and the terseness of the "scientific" monograph. In such monographs, mathematical terms and statistical tables substitute for words while in this report words are the "media and the message". Here--in contrast to the mini-skirt of the monograph--the message comes in 19th century dress, fold upon fold of student words encasing thoughts, interests and dreams. My preference, at this pioneer stage in the exploration of human potential, is for this romantic, unabstracted pattern. I find primary communication with a rich abundance of direct experience and illustration more appropriate and certainly more appealing than the squeezed-down and stylized patterns of secondary communication.

And yet I know there are other viewpoints--I have met them, head on. Over the years as I have reflected on what an education should be and what is meant by "aims of education", I find that while most would agree that we must educate both heart and head, the interpretations of what such an aim means are poles apart. At the far right are the fund-granting agencies and university administrators concerned with money, rules and legalisms; while on the left are the humanistic and student-oriented researchers devoted to change and growth in all of its apparent unorthodoxy, and wondering how they will ever manage to report this in the research paradigm and within the imposed time limits. The dilemma is clear, but a way out is not. The histories of religions have reflected basic schisms between the legalists and the mystics. The study and management of human potential is beginning to reflect the same deep conflicts.

Yet despite the problems imposed by prescribed research style and time limits, I feel a researcher who is honest in his humanistic stance must write so as to advance the cause of youth and to change the monoliths of education into something more permeable and human. It is mandatory that psycho-educational research be concerned with the human treatment of human beings even if this is a drawn-out, ill-defined and inefficient procedure. And this must be the stance even when the educational establishment is permeated by an "efficiency syndrome" and dictates rules which, when they are translated, succinctly say "get something written, no matter what it says", "get the report filed, no matter how it is worded, so money can change hands." In other words, unless precautions are taken, the intent and honesty of the message becomes far less important than meeting deadlines. The "person" and his needs, the only reason for research on youth can too easily be lost to time pressures and budgetary codicils.

My viewpoint is that if our knowledge about the process of education and about youth is broken into icy chunks of facts which are sterilely transmitted through a computer this knowledge is not apt to ever directly meet an individual's needs. Certainly it will not leave him with the direct experience of love and concern so necessary for the learner. It was Goethe who not only said that if we dissect a flower down to its minutest part, we will not know it; but who also remarked, "We only learn through those we love." Somehow the individual must remain whole and cherished as we study him.

But despite these visions of a new image of man, there are contradictory forces that seek to limit, control and mechanize him. Instead of the trans-humanism suggested by Julian Huxley and the psychology of a transcendent behavior offered by Sidney Jourard, we see large task forces committed to reductionism. However, the younger and healthier of our species are beginning to resist these trends. It is becoming increasingly apparent that the students, particularly those who are adolescent, are restless. They have rebelled at Berkeley, there has been foment at Michigan, and dissatisfaction with education as it exists in dozens of other universities and colleges. In countless ways high school and college students* have asked that faculties try to know them as people--but as educators, we still give them the non-answer of public relations** and go about our "business". Thus far, we have generally not engaged in dialogue--there can be none when the voice of the student is drowned by the noise of the wheels of progress grinding on, creating more bigness and more impersonalness. Despite each student's desire to be known as a person, classes continue to get larger and, in the process, he is apt to lose his name and become a number--all in the cause of dehumanizing efficiency. As the gap between student needs and institutional reality widens, out-of-school learning centers and shadow universities will grow at ever accelerating rates.

CULTIVATING CREATIVE POTENTIAL

As we look at the ways we educate youth and study the patterns of alienation which riddle our culture, it is sometimes difficult to be enthusiastic about what seems to be the manifest destiny of 20th century man. Yet I cannot easily resign myself to unconcern or to despair. I feel that youth has more to offer than mass media or jaundiced adults apparently believe. On most days, at least until well past noon, I remain convinced that we stand at the threshold of a new era for man. My research findings have tended to reinforce my most errant optimistic and romantic tendencies. As I have tried to understand gifted adolescents and the effect their educational experiences and the general social setting has on their dreams and on their character, I have been buoyed by their obstinate tendencies to persist in (often against overwhelming cultural pressures to the contrary) idealistic, imaginative, and intelligent behaviors and to remain excited and eager to grow toward self-actualization. Beyond this, I have been fortified by my experience with a new kind of education*, an intervention if you will, in which I tried to determine whether attitudes, interests and values could be moved toward self-actualization. The resounding answer is that they can be--young people reach eagerly toward the more helpful and elevated patterns of thought and belief. They enthusiastically substitute more ideal and mature self-images for those they held before. I am convinced that some of the adolescents in our study were already moving rapidly in this direction. Others were timorous about committing themselves but excited about possibilities. When, in our total front approach, assurances were repeated they began to express hope and idealism and self-confidence too. Over half of the experimental group showed by interests, attitudes, behaviors and self-descriptions that they were or wanted to be self-actualizing. Certainly this was only one small effort to release potential, but I think the experiment shows what is possible. Other efforts must be made by those who share my convictions that the drives to learn and to become psychologically open are the most important of all those kinds of focused energy which can be described as achievement motive. Far more than the urge for status or power or to please others, this motivation to grow toward intellectual and psychological maturity is the essence of being human and it is this which makes the many kinds of transcendent behavior possible.

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*In the late 40's while I was on the staff at the Psychological Clinic at the University of Michigan there was talk about marasmus, the disease from which hospitalized or institutionalized infants suffer. Babies literally died from lack of fondling and human interaction. Much was made of Margaretha Ribble's plea in her book, The Rights of Infants, that each infant had the right to be known and loved as a separate person and must have this to become human and intelligent and perhaps to live at all. Now we find the bolder adolescents asking for the same rights. The shy ones want it too but may--instead of using Free Speech--remain mute, hurt and helpless. Recently a sensitive, lovely high school junior came to work for me. In the employment process I asked her to refer me to someone on the staff of her high school who could recommend her. She said that she was quite sure none of her teachers knew who she was. Perhaps they did, but the important thing is that she did not think they knew her or could speak for her. She felt doomed to anonymity in her present institution but referred me to her elementary school where she was sure they would still remember her. They did, and glowingly reported her as one of the most able and reliable and human students they had ever had.

**Equivalent to head-patting to put off the young, and hand-patting to put off the old.

---

*Elizabeth Monroe Drews, THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS; Being and Becoming: A Cosmic Approach to Curriculum Revision, Report II in a series of three: Final Report for the Media Branch, Title VII, National Defense Education Act, Contract No. 7-32-0410-140, U.S. Office of Education, "The Effectiveness of Audio-Visuals in Changing Aspirations of Intellectually Superior Students," Phase I. (East Lansing, Michigan: Office of Research and Publications, Michigan State University, 1965).

The insights which Report II (the Being and Becoming study) offered into the potentials of youth led me to design this third study on THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS*. Here the effort has been to study the relative duration of the changes we felt to be a result of the Being and Becoming Project, to look again at the theories from a variety of disciplines which support such efforts, and finally to make a more detailed and careful study of the creative intellectual style in youth. Both because I feel encouraged by my findings thus far and because my work has contributed only infinitesimal insights in terms of what is needed, I know this cannot be the final effort. Through three investigations, I have come to know the students in our schools in ways I did not know them as a teacher, and as I have struggled to find theories to clarify and unify my thoughts I have come to know--at least through their writings--those men who are in the vanguard of the movement concerned with psychic evolution.

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*The term creative intellectual style is one I have used to indicate a motivational focus in learning and a supporting value system. Although the word creative implies openness and also a search for meaning through aesthetic, affective and intuitive channels and intellectual adds the dimension of a more critical and scholarly mind engaged in scientific endeavors, I am aware that such a literal interpretation does not include the context of social concern which I consider to be the most important mature expression of the creative intellectual style. Those of you who read Report II noted the stress on humanitarian-altruistic concerns, sometimes referred to as the feminine dimension. Although such B-values were found by Maslow to describe all self-actualizing adults, as yet only a small number of adults who excel in creative or intellectual pursuits can be described as self-actualized. However, there is some potential for such growth in all and great potential in many.

As I continue in my work, I become increasingly aware that the students I know and the theories which I accept are profoundly affecting my research, my philosophy and my life style. Friends and enemies both say--with different intonations--that I am always part of each experiment and I become increasingly aware that each study I do becomes part of me. E. B. White's aphorism, "The trouble with life is that one thing leads to another" has become uncontestable truth. As I just mentioned, despite the distance I have come--if millions of pages of data, taped records and written words can be counted--I am still near the beginning of the long hegira, my elusive, long-range goal to better understand self-actualizing behavior and to learn to educate for this rather than to follow present patterns of sandbagging and channeling potential.

As you read this report you will see that the question which I ask (but cannot answer) is why certain of these young people, despite the forces of apathy and alienation which surround them, have such a determined drive to live lives of creative expansion. Why do some develop and retain this special urge to engage in original thinking and to become intellectually and morally involved? As yet, I must admit that the genesis of this creative intellectual style remains obscure. Although in the present report I attempt to explore the beginnings of such growth through interviews and case studies* the data, as you will see, is too conflicting for me to draw definite conclusions. The behavior of one creative intellectual seems to be an expected reflection of a family pattern while another develops similar motivations apparently in opposition to every kinship tradition--where, in fact, the expression of love for the aesthetic and the scholarly isolates him from his family. Despite the inconclusiveness of the present study I feel that as a reader you will be intrigued by the self-insights of these able adolescents. Through the students' eyes we see:

> Their commitments and passions for ideas, people and causes.
>
> How they come to grips with "matters of consequence."
>
> How curiosity and search develops and proceeds.
>
> And learn about those who go beyond concern with pleasure and success to grope toward responsibility and search for meaning.

In studying these 120 college-bound ninth graders, I was amazed at the diversity of responses and the varieties of motivation revealed. Certainly, as I have noted before, some young people far surpass others in self-actualizing activities and drives. However, it is equally certain that all healthy youth lean toward and would benefit from a fuller and richer use of mind and emotion, what Rollo May calls expansion of consciousness. It is my hope that my findings and those of other researchers who study human potential will be turned toward this end. Each young person who reveals a high degree of openness and commitment contributes to the discovery and understanding of such growth in all youth. These understandings will help us find ways of instilling vitality and awakening joy in far greater numbers of adolescents--including the malnourished, the deprived and the disinterested.

---

*This report concentrates on depth studies of six adolescents. The motivation and values of two of these provide contrast to the creative intellectual style. The first adolescent places primary emphasis on social status and economic success, while the second is motivated to be a good student in the school's terms. The remaining four are examples of variations of the creative intellectual style--one a student shifting from a more studious orientation and the three others each exemplifying a strength of interest--one in the intellectual realm, one with an aesthetic focus and one with strong pro-social concerns. The studies draw from interviews and thus, to a great extent, report students' self-perceptions. It is from these revelations that I have come to see the strength of motivation and concern of some of our adolescents.

As I have reviewed the literature related to human potential and the creative intellectual style I have examined three avenues to growth--the routes that Socrates termed the good, the true and the beautiful. In the vernacular of psychology it would probably be more appropriate to speak of the ethical, the intellectual and the aesthetic. These are in Maslow's terms, B-values, and each is an aspect of or a way to reach self-actualization and thus not truly separate from the others. However, most creative people concentrate their efforts in one of these broad areas* despite the fact that in each, there are many common traits such as autonomy and openness. Three of the case studies of adolescents represent these distinct directions of growth--one is of the budding scientist-scholar, one is a romantic rebel and the last a humanitarian-altruist.

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*In contrast, the great geniuses were marked by a unity of thought--an ability to establish parallels between different things.

IN APPRECIATION

I should like to refer the reader to the preface of the first two volumes of THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS. In these I expressed many of my intellectual obligations and also thanked the personnel (administrators and teachers) in the Lansing Public Schools who have helped to make my studies possible. Report III is primarily devoted to explorations in depth of a selected group of the young people themselves and I want to make a special acknowledgement of their contributions. In addition, I want to thank the three young people who helped with the interviews--Arlis Thornblade Stewart, David Kanouse and Robert Trezise. As my graduate assistant, Mr. Tresize did extensive context analysis of the interview protocols. This material became the basis for his doctoral dissertation, completed at Michigan State University in 1966, which is entitled "A Descriptive Study of the Life Styles of a Group of Creative Adolescents".

The development of my thinking also owes much to all of those who served as film models for the Being and Becoming Film Series. Three of the models, Loren Eiseley, Anne Roe and Harold Taylor, have published extensively and I have gained much from their provocative insights into human nature. The writers in what is often termed "Third Force" psychology have also influenced me greatly and in this realm I want to acknowledge understandings I have gained from Gordon Allport, Charlotte Buhler, Erich Fromm, Rollo May and Carl Rogers. I owe a very large debt to Abraham Maslow whose writings are a constant source of inspiration and who has encouraged me to move toward the more direct experiential reporting. I also have been much influenced by Robert Havighurst whose great concern for moral and character development has been expressed in

excellent socio-educational research and commentary; and who, as well, makes me aware that one can remain eternally young, if he persists in these more idealistic and open ways of thought. I want to express continued appreciation to Donald MacKinnon and his co-workers at the Institute of Personality Assessment Research Center at Berkeley for their willingness to share instruments and methodology, and to Paul Heist, Research Psychologist, Center for the Study of Higher Education, University of California at Berkeley, for his help and encouragement.

My most immediate and personal appreciation must go as always to my husband, Robin Drews, who has tolerated the many versions of my personal "being and becoming". His encouragement and that of Shirley Brown who has--always creatively and intelligently--typed major portions of the report, and Mary Nelson who has with great zest and competence helped me with the finishing touches, have made it possible for me to finally complete the study. Fariyal Sheriff, Kay Snyder and Philip Jung helped in a multitude of ways in both early and later stages--perhaps most importantly by being examples of the creative intellectual style. At times, the completion has seemed almost impossible because of the nagging inefficiencies produced by a serious illness, by a major move and finally by the anti-actualizing forces of Gesellshaft rules and routines. Now, I am both out of the woods as well as in them. We live in Oregon in the midst of a cluster of tall maples and I am professor of education at Portland State College. In this position I am excited about the possibilities of my new work which is focused on setting up a program for individuals who want to concentrate in their graduate studies on the release of human potential--intellectual giftedness and creativity.

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I. INTRODUCTION

The young person today poignantly asks for a place for himself, his dreams and his abilities. He senses that he is in the midst of a revolution, not only in technology, but in ideas and in thought--in the very concept of what it means to be human. Among gifted adolescents these feelings are particularly common in a group which we have called creative intellectuals. The creative intellectuals, as yet a relatively small group, are particularly sensitive to the world of ideas and of humanistic values, and are acutely aware of the past and of the future. This is the youth who reaches out, often uncertainly, as he tries to comprehend--through any and all of his senses--the spreading waves of change. He seems to realize that only by the use of reason and imagination in a framework of civic and personal morality can this environment of change offer the kind of reality which Socrates characterized as good, true and beautiful.*

Increasingly psychologists are coming to feel that the healthy, psychologically mature individual must learn to live, within self-imposed moral standards, a life of creative expansion. Rexroth notes that Socrates saw this morality, which was founded on reason rather than custom, "as subject to continuous criticism and evaluation in terms of the ever-expanding freedom of morally autonomous but cooperating persons, who together make up a community whose characteristic aim was an organically growing depth, breadth, [and] intensity of experience."[1] The aim then must be in preparing for an undecipherable future to meet life as it is "becoming" with flexibility but also with a theory for living. We must resist bringing too much order to realms of thought--including concepts of what one is to become--too thoughtlessly and too soon. Man is undoubtedly evolving in both the intellectual and spiritual realms. We must ask ourselves what direction we want this evolution to take. We are continually becoming, often unwillingly, more responsible for ourselves and for all of mankind. What are the routes to personal and social fulfillment? It seems unnecessary to state that they must be in the direction of understanding, kindness and peace. What potentialities has youth for such a development of human powers and of the ability to use them in understanding and working cooperatively with other human beings?

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*In a sense his search for meaning is often echoed in adult quests and uncertainties. Both adolescent and adult feel the loss of the old centers of gravity, the old personal and institutional ideologies. However, the average adult often refuses to face the new and/or rejects change as unreal or as an ordeal while youth is more apt to face the present, to look into the future, and to have a sense of joy in his projected participation in the frontiers of life.

As we move out of the industrial age into a new era which Bell has specified as the Post-Industrial society, we see that new models of education and even of the end product of this education--the individual--are necessary. We take the position that the creative intellectual style, an attitude toward learning and life which approaches self-actualization, will be best for this new kind of society and will be personally rewarding for the individual who develops in this direction.

A. The Dimensions of the Creative Intellectual Style

Why would the creative intellectual style be most appropriate? We believe there are many reasons, all of which can be subsumed under three different modes of human development: cognitive, affective, social. Today's world demands a high level of development in all of these modes. This developed talent results from self-discipline, which in turn rests on motivation to learn. Motivation is essential to the creative intellectual style. It serves as catalyst and organizer and without it even the best minds accomplish little.

The Post-Industrial society will depend more and more upon the conceptual innovator. With this change toward greater valuation of abstract thinking and the intellectual process, there needs to be a simultaneous increase in the valuing of impulse release and aesthetic expression. In addition, there seems no doubt but that there must be growth in humanitarian and altruistic concerns in the society at large. We have viewed the creative intellectual style as prototypic for this new world and, in the idealized sense, feel there would be a balance among these three dimensions,* much as Maslow has spoken of self-actualized adults as having strength in cognitive, emotional and moral realms.[2] All individuals need to develop and to live at their fullest potential and the society needs such actualized individuals.

1. The Cognitive Dimension

The sheer volume of new knowledge being generated and its projected high rate of increase points up the need for the kind of mind that can deal with new ways of processing and synthesizing information. Machines will be extremely useful, but civilization is dependent on the human mind for high level generalization and synthesis and for directing the machines.** Confronted by such staggering amounts of discrete information produced by an ever-increasing multiplicity of different specialties and, simultaneously, faced by the overwhelming need to understand what it all could mean to mankind, it is obvious that society needs those who can go beyond the "given" by the power of imagination, abstract thought and intuition. Bronowski observes that increasingly scholars in all areas are called upon to deal with abstractions[3] and Bruner confidently states that our age is emerging as an intellectually golden one.[4]

---

*In actuality, there is a wide range of differences within the creative intellectual style, that is, varying balances in terms of the cognitive, affective and social.

**The fact that machines are taking over work means that the character of work is changing. Vocational education, as we have known it, is becoming inappropriate and education for everyone must be of the nature that will help the individual to become more human. Education must prepare each individual for an open future and help him understand the world and himself in ever-changing contexts.

Not only is trained intelligence urgently needed, but we can also say that never before has there been such a favorable convergence of trends which would facilitate and encourage the individual and the society toward intellectual excellence. Bell holds that the intellectuals will be the innovators of the future because ours is a future-oriented society where the planning function, essentially an intellectual process, is becoming crucially important. Innovation in the realm of concepts and ideas has superseded in importance innovation in the realm of things. Despite the convergence of trends that should facilitate and encourage conceptual innovators, despite the social need for such individuals and despite a growing tolerance for eggheads, there is still strong anti-intellectualism in all strata of American society. We agree with Mead that " . . . we have not created even on a pilot experimental basis, the type of social organization capable of finding, recruiting and providing for the innovative intelligence we need."*[5]

2. The Affective Dimension

Self-actualizing behavior and the creative intellectual style in the final and highest synthesis must be framed in an elegance and beauty. In this discussion we are concerned with two aspects of the affective dimension:

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*The experimental program described in Report II, The Creative Intellectual Style in Gifted Adolescents, was a pilot effort to foster such growth in four junior high schools and with approximately 125 young people.[6] We acknowledge that this was only one effort and, although desired changes in attitude seemed to result, many of our original questions remained unexplored and many new questions arose.

(1) the personal expression of elegance and beauty, and (2) the appreciation of these qualities. In both situations Nietzche's observation applies: mere reason is not enough. Both reason and feeling are necessary; indeed, both must be fused, finally, though each may be cultivated separately. Society will be far richer and individual development will be greatly enhanced if such growth is fostered. As Mannes says: "I cannot think of any human occupation which cannot be made more significant and more effective through the enlarged perceptions which acquaintance with the arts nourishes."[7] Mannes continues by exploring the need for a development of the senses to their highest capacity--to hear, see, taste, smell, and touch with knowledge and judgment. This is in the tradition of Camus who observed that " . . . man cannot do without beauty. . . ."[8] However, he was fully aware of the struggle in which the artist must be engaged if he is to be accepted in the present era and particularly in Western Civilization. For it was Camus's contention that the modern West glorifies the rule of reason and leaves out the aesthetic realm: "We have exiled beauty; [while] the Greeks took up arms for her."[9] Man needs beauty; therefore, society needs those who are not only intellectually creative but are also creative in artistic expression, those who can add to our culture by creating beauty in any endeavor which they may undertake.

The need to cultivate aesthetic expressiveness is often acknowledged and there is general agreement that we are in the midst of a "cultural explosion." Ours is a rich society and the multitude can buy aesthetic pleasures with ease. There is also no doubt but that mass man has more leisure* in which to cultivate his feelings and has more years of education in which artistic appreciation might be fostered and creativity as a major form of self-expression might be developed. This is all very encouraging but honesty forces us to question the depth of American concern for fostering creative potential. And our willingness to accept those individuals who do express independence of thought and impulse, and the depth of artistic understanding of those who attend functions and buy the art forms, must also be questioned.

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*Richard L. Tobin, in his recent editorial, "Man as a Beast of Burden," observes that "as recently as Woodrow Wilson's time it was necessary for the federal government to pass laws limiting a man in heavy industry to ten hours per day, six days a week. In the sweat shops of Manhattan at the turn of the century, children of nine and ten labored

Research indicates that the creative adult is not well accepted by his fellow workers (Taylor)[10] and that the creative school child is not well accepted by classmates and teachers (Torrance).[11] As we have noted, the present cultural explosion could be interpreted as an indication of a rebirth of interest in beauty.* And if we are willing to measure growth of the aesthetic sensibilities by sheer quantity of exposure we must agree with Mannes who says ruefully, "We are getting more and more cultured all the time: the figures say so."[12] There is no doubt that more concerts are attended, more museums are visited and more records (including those featuring classical music as well as Beatles) purchased than ever before. However, we cannot be sure that aesthetic appreciation or creative involvement are flourishing if we simply measure culture consumption and take note of the amount of time the individual has for such enterprises. As Mannes observes, "You cannot . . . measure the quality of attention or the depths of the impact."[13]

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twelve to fourteen hours a day."[14] (p. 22) Recently, as we all know, labor has been considering the possibility of a five-hour day and a four-day week. Unskilled labor is becoming obsolete and similarly there is less and less demand for the skilled worker, the white collar worker and even "middle management." The human being must be occupied in other ways than by the familiar demands of work.

*We mean by beauty those spiritual as well as physical and sensuous qualities which by their fitness, proportion and balance excite keen intellectual and moral pleasure.

3. The Social Dimension

Finally, as we explore the dimensions of the creative intellectual style we must examine social and ethical growth in terms of cultural readiness within our society. We must also be concerned with direct ways in which we foster such growth.

In the culture at large, we can point to an increasing recognition of the need for such feelings and expressions. On a crowded planet, sympathy, tenderness and generosity are infinitely more practical than selfishness and cruelty. Huston Smith poignantly expresses mankind's needs and hopes in this way:

> It would be wonderful if mankind could "go critical" in humaneness . . . heart and head are going to have to work patiently and in complement in seeking to preserve this great and lovely world . . . which man has been given thus far, to live.[15]

Certainly, there are few who would disagree with Bertrand Russell when he says that the good life is one inspired by love as well as guided by knowledge and makes it clear that in the new world (the twentieth century) the kindly feeling towards others which religion has advocated will be not only a moral duty but an indispensable condition of survival.[16]

Fortunately we can point to certain kinds of progress in terms of pro-social activity and an expansion of conscience. C. P. Snow, in evaluating the ethical status of the Western World, says that we ought not to forget, despite the horrors of the concentration camps and Hiroshima, the things that are to our credit. He suggests that we consider the care that the Swedes and Danes give their old and poor, their prisoners and social misfits and that we remember that the British, too, show an increase in moral sensitivity as they "attempt, however grudging, to treat women as though they were equal human beings." Snow continues:

> There are signs of a development of something very rare in the world up to now, which one might call

> moral kindness . . . this amount of fairness, tolerance of and effective kindness within the society would seem astonishing to any nineteenth century man.[17]

However, institutionalized care and perfunctory kindness cannot nourish men's souls and enlarge their spirits. We acknowledge that each individual must find his own identity, but hold that final independence and integrity of spirit is only fulfilled through love.[18] Too often men feel estranged, out of place and adrift. Riesman has explored with great sensitivity the inability of many men today to find meaning and self-fulfillment in a world dominated by the imperturbable machine and the faceless city.[19] Focusing on a single individual, a young Algerian, Camus evokes a mood of hopelessness and numb despair in The Stranger.[20] As May says, "Modern human beings feel they have lost their sense of community."[21] This sense of alienation cannot be taken lightly. Certainly it has been an overriding concern of existential philosophers, "third force" psychologists and other social commentators. Gardner's suggestion that we must seek excellence in a context of concern for all may be a partial answer. For some individuals the Biblical injunction that they find themselves by losing themselves in service to others may serve to dispel meaninglessness.

B. Idealized Conceptions of Society and Man

History can tell us much about what man has thought, how thought was translated into action, and what the results were. Certainly there is a need to know the past so as not to repeat mistakes and to understand how we have become what we are. There is a further need to use history as a means of predicting the future. However, extrapolation into the future from historical information and perspective alone is not enough. What is past is not necessarily prologue. The future is being determined more and more by human intervention. As Rush has said, "[Man's] powers over his environment are increasing precipitately."[22] He contends that man is intervening in the course of evolution in such ways that "whole orders of life" may be swept from the earth.* There seems to be little doubt that Dubos is right when he asserts that what happens to man is conditioned largely by man's imagination and human will.[23] The fact that we can do something about the future makes it imperative that we act responsibly and make the best plans possible. In order for human beings to be prepared for tomorrow's world, tomorrow's world must be envisioned and this vision must meet the requirements of the best human life pattern that we can conceive. We cannot be fully human in just any kind of world.

We propose that one of the most sensible, practical and intelligent ways to prepare for the future is to construct open-dynamic utopian models of society and complementary prototypic models of the ideal human being. It is essential that models be conceived as open and dynamic. As Sanford** says, "The limits of human potentiality are still unknown; hence any conception of the ideally developed person must be open-ended."[24] Sanford feels that it is both possible and desirable to develop such idealized images or conceptions of the human being and holds that they should be consistent with existing theoretical and empirical knowledge. In terms of the need for the idealized conception of society, Platt--without qualification--says, "The world has now become too dangerous for anything less than Utopia."[25] There is currently much interest in utopian conceptions of society, and recently an entire issue of Daedalus, the journal of the American Academy of Arts and Sciences, was devoted to the topic.[27] These models of an ideal society, as is the case with the idealized human image, must be consonant with current theoretical and empirical knowledge. Thus, we hold that models for creative social development and interaction must be open and dynamic, i.e., subject to continual modification. Further, they have the exceedingly important function of serving as frames-of-reference for planned change and as projected directions for development. The quality of the vision, the world we resolve upon, must be fit for the joyful habitation of man. Utopian formulations must include statements of the ideals and practices which will enhance the human condition. Platt suggests that through planning we might derive future benefits from man's capacity for intervention:

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*In support of this argument, Rush points to the fact that Americans are rapidly destroying the wilderness frontier and states unequivocably, "When man obliterates the wilderness, he repudiates the evolutionary process that put him on the planet. In a deeply terrifying sense, man is on his own."[26]

**Nevitt Sanford, Director of the Human Problems Institute, Stanford University, Palo Alto, California.

> It will be a time when man can begin to plan what he wants man to be, as each individual makes his personal plans today--a time when accident and drift will finally begin to be replaced by conscious human values and decisions.[28]

Examples of the need for and the possibility of the use of the "ideal" or the theoretical model can be taken from the sciences. It is well known that the ecologies of the natural world, as well as of man's social worlds, are so intricately related that planning is an absolute necessity if we are to escape chaos or destruction. Every change affects the ecological system in many ways; therefore, every projected modification must be thought through with great care. There is considerable precedence for theoretical constructs and projections of this kind, notably in the sciences. We quote from Sears:

> However widely projections may differ, it is folly to regard them as a useless waste of time. The geologist derives order from the idea that surface processes move toward conditions of maximum uniformity--the peneplain, rare or absent in actual experience. The ecologist solves many of his problems by viewing living communities as working toward an idealized climax condition of dynamic

> stability, an open steady state. In longer view the physicist looks upon our solar system as moving inevitably toward a condition of entropy--that is, a minimum of energy free to do work. The mathematician, for his part, makes constant use of the idea of limits. All of these formulations are not only useful, but consistent with the rules of experience based on observation.[29]

We submit that the theoretical, imaginative construction of social utopias and prototypic human models on the basis of the emerging needs of society, and consonant with all that is known about the nature of society and man, is one of the most judicious and helpful enterprises in which qualified people could engage. These are the speculative and holistic endeavors which, as Maslow notes, take " . . . courage and demand a willingness to step away from the narrow platform of certainty."[30]

For such idealized constructs to be developed and applied to the human condition it will be necessary, as the philosopher Reiser contends, for a "new form of thought and orientation" to become operative in the coming civilization. Reiser continues: "The new vision cannot be an a priori super-position from above. It must be the emergent outcome of a creative evolution on the human level."[31] This creative evolution can and must become, at least partially, a conscious endeavor. Thus we suggest that not only the past images of man be reviewed but that there be a primary focus on new prototypes which have evolved or are emerging. As Maslow sees the situation:

> One way of looking at the history of mankind is in terms of the ruling image of man. If you look at it that way, there have been only four or five such images: The Renaissance image, the medieval, the Catholic-Christian image, the Athenian image, the Knight, and so on. Each of these images has occupied people for a couple of centuries, but today we face . . . as great a revolution as you can have. It is simply a different conception of the nature of man. . . .[32]

We have already presented the idea of self-actualization and the creative intellectual style as a prototype-ideal for human development. We would agree with Rexroth who engages himself in dialogue by asking what man does at his optimum and by replying: "He creates. He uses his mind and body to their fullest capacities."[33] Although this pattern of growth seems particularly suited for the Post-Industrial society and more generally possible now than ever before, we must acknowledge that there have been historical antecedents--models which were similar in some respects. Bruner cites the Jewish and Chinese concepts of the beautiful person. Both cultures held in highest esteem an individual who was richly developed both intellectually and aesthetically. This ideal individual was seen as " . . . one who blended knowledge and sentiment and action in a beautiful way of life."[34]

The beautiful way of life venerated by the Jew and Chinese includes elements of greatness which are beyond those usually associated with creative productiveness. We refer particularly to a deep concern for humanity. Sorokin has studied a number of individuals who have led beautiful lives characterized by the quality of altruistic love. The primary focus of the innovative power of these individuals was human, and their impact upon mankind was a result of love as well as of exceptional intellectual and imaginative talents. With altruistic love as their chief source of potency, Sorokin feels that these people made the most deep-seated and long-lived changes in the history of mankind. We quote from Sorokin:

> If we ask ourselves what sort of individuals have been most influential in human history, the answer is such individuals as Laotze, Confucius, Moses, Gautama Buddha, Mahavira, Jesus, St. Paul, St. Francis of Assisi, Mahatma Gandhi and other founders of great religions, discoverers of eternal moral principles, and living incarnations of sublime unselfish love. In contrast to the short-lived and mainly destructive influence of autocratic monarchs, military conquerors, revolutionary dictators, potentates of wealth, and other historical persons, these great apostles of spirituality and love have most tangibly affected the lives, minds, and bodies of untold millions, of many generations during millennia of human history; and

> they are tangibly influencing us at the present time. They had neither army and arms nor physical force nor wealth nor any of the worldly means of influencing the historical destinies of nations. Nor, to obtain their power, did they appeal to hate, envy, greed, and other lusts of human beings. Even their physical organism was not of the strongest kind. And yet, together with a handful of their followers, they morally transformed millions of men and women, reshaped cultures and social institutions, and conditioned the course of history. They did all this by the mere power of their sublime, pure, and abundant love, by their unselfish spirituality and supreme wisdom.[35]

In Report II[36] we observed that each of these individuals was a "master of his times," but also belonged to all times; he was a citizen of a community and a state, but also a contributor to the world order. Distinguished by his wisdom and compassion, he was aware of the inner needs of man and of the importance of achieving a rapprochement with other aspects of life--with his fellow man and with nature. All saw that life had basic unities that must be understood and interpreted.

We are arriving, as Maslow says, at a different conception of man--one that has grown out of current needs but has a kinship to prior images, as we saw above, and that has been adapted from a few human models, e.g., Sorokin's apostles of spirituality and love. We feel that Maslow's formulation of the self-actualized individual whose relationship with his society is synergic*[37] is a viable pattern and a suitable image for the new society. The question that must follow as we try to put the specifications for the new image into effect is: What are the possibilities for the generality of humankind to develop in these directions?

Social philosophers contend that the wealth, medical

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*Such synergic or unitary and cooperative relationships between man and his society are not a new conception. The Enlightenment ideal was that of a perfect adaptation of individual to society and society to nature.

expertise and educational advantages available for an ever-increasing segment of the world's population would allow much of mankind to move into a "growth" phase. There is both freedom and opportunity for discovering and learning to live the good life and for growing in a variety of creative and expressive ways. As Reiser has put it, we could become a "fulfillment" society rather than a Welfare State.[38]

In this hypothesized future it seems quite possible that the basic needs for physical comfort and safety will have been met. However, new needs are apparent which arise from the very emergence of intelligence and which move us toward new patterns of living and thinking. Platt feels that man is being pressed by "the great evolutionary hormones of knowledge and technology" into "power and prosperity and communication and interaction, and into increasing tolerance and vision and choice and planning--pressing us, whether we like it or not, into a single coordinated humankind."[39]

Platt's view coincides with that of deChardin who had long before speculated that the most notable change in man will be the raising of human potential. It was this "eruption of interior life," reflected in the mushrooming of knowledge, research, thought and technical advance, that led deChardin to his conception of the evolving noosphere.* He held that evolution has not stopped but has merely shifted its emphasis from the realm of the material to the realm of thought and spirit. He felt that this increasing use and development of mind would inevitably lead to the "planetisation" of the human race; that all mankind, even those with apparently implacable hostilities, would be mingled together and united by the ever more comprehending and all embracing evolution of the noosphere.[40]

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*deChardin conceived of the noosphere (from the Greek word for mind), the realm of mind, as being analogous to and evolving from the biosphere, the realms of living organisms, which in turn evolved from the lithosphere, or the realm of inorganic earthly matter.

Of course, we do not know what the possibilities for realization of this kind of speculative thinking will be. However, there seems to be no doubt but that there are pressures for such changes, the pressures of human needs and the pressure of advancing knowledge. Beyond this, the explosion of world population and the increase of intercontinental travel produces an unprecedented need for human cooperation, what Reiser has called "world unification."[41]

Not only are there these outer or social needs, but there are also inner or individual needs that cry to be satisfied. As Maslow says, "Capacities clamor to be used and cease their clamor only when they are used sufficiently. That is to say, capacities are needs. . . ."[42] Maslow illustrates this in many ways. He notes that human beings with fine bodies need to use their muscles and that people with the capacity to love have the impulse to love and the need to love in order to feel healthy. In terms of the creative intellectual style as it appears in gifted adolescents, we cannot but agree with Maslow when he says, "People with intelligence must use their intelligence. . . ." and when he further asserts that poets must write poetry and musicians make music[43] and those who need to construct utopias must construct utopias. In other words, to lead a psychologically healthy life each human being must make as full use as possible of his potential. Perhaps one of the most promising indications that change in these desirable directions may occur is that the very building of utopian models for society and idealized conceptions for human development serves to foster growth in these directions.

C. Potential of Youth for Creative Intellectual Growth

Psychologically healthy young people* tend to make good choices and to grow in self-fulfilling ways. In addition, youth, and particularly those who are most intelligent and sensitive,[45] are generally open to the future as well as to the prevailing zeitgeist. They seem, far more often than is true of adults, to be willing to deal with the most current of ideas and to contemplate new conceptions of the future--even those of a highly idealistic or utopian nature. All of this leads to (or perhaps is due to) a desire of these young people to use their minds. This is the group among whom White's "drive for mastery," in terms of motivation to learn, is most apparent.[46] They want to realize their values and many will probably do so if they are not forced to acquiesce to cultural demands.* In all of these ways certain of our able young people show themselves to be predisposed to the creative intellectual style.

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*Our studies show the gifted to be, as a general rule, more advanced in emotional and social development than their agemates of average or below average ability.[44]

There is evidence that there is a proportionately increasing per cent of young people who show such inclinations. We hold that there is a general increase in intelligence and in desire to engage in critical thought; an augmentation of aesthetic sensitivity; and a growth of social conscience among our youth. Particularly, there is an expansion of the ability to comprehend the world. As Mead has observed, "Man's ability to comprehend his world and conceptualize his place in it grows ever greater."[47]

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*A sociologist, Friedenberg, reports that gifted children, especially the more independent, unconventional and creative ones, are often the focus of hostile pressure brought to bear on them by their teachers and peers in order to bring their behavior more in line with the norm for the group.[48] In a similar vein, Henry, an anthropologist, notes that the more creative and contemplative students are not well accepted in the schools and feel that life will not offer the opportunity to learn or to search for the truth but will, instead, demand that the young person "go on in society and make money."[49]

1. The Cognitive Dimension--Intellectual Potential

In the earlier discussion of the cognitive mode we were primarily concerned with the more advanced levels of thought expressed in abstract thinking and conceptual innovation. We recognize, however, that the general public and school people, in particular, usually think of intellectual potential in terms of the popular concepts of intellectual ability and achievement as measured by tests. Certainly all of these are valid aspects of intelligence as we define it today.

Interpreted either by perceptive social observers or in the idiom of the intelligence tests there seems to be little doubt but that today's young person is brighter and better informed than he has ever been. After World War II a Scottish survey on school children showed higher intelligence test scores than a similar survey had shown a generation before.[50] Tuddenham studied American soldiers in both world wars and found that those from the last war tested significantly higher. He reports that "performance on a group test of the kind usually described as measuring 'general learning ability' or 'verbal intelligence' has markedly increased from World War I to World War II."[51]

Not only do young people seem to be more able and better informed than they have ever been, but they also appear to have greater talent for keeping well informed. Recruits in the first world war typically read at fifth grade level, but the average inductee of the second world war tested at tenth grade reading level. The talent for reading shown by the general public has continued to improve in the past two decades and the gifted and creatively inclined young person reads very well indeed.*

Despite these apparent increases in intelligence and in academic skills such as reading ability, we would be less than discerning if we did not recognize that there are many able students who do not develop inquiring minds. Not all students with developed ability and who test within the academically superior and intellectually gifted ranges have the kind of motivation to learn, commitment to ideas, and openness to psychological growth which we have seen as essential to the expression of the creative intellectual style. As Wolfle has asserted, "it is . . . neither safe nor . . . realistic to assume that high ability is always accompanied by high motivation, that human talent will override obstacles to find its own way to fruition."[53] The focused energy and the tenacity of purpose demanded for consistently high level and original performance (effective behavior in the mature creative intellectual style) is probably a rare quality. The Rockefeller Report on the Pursuit of Excellence observed that excellence results from a combination of ability with motivation and character and notes: "And the more one observes high performance in the dust and heat of daily life, the more one is likely to be impressed by the contribution made by the latter ingredients."[54]

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*Report I on The Creative Intellectual Style in Gifted Adolescents has a detailed discussion of the reading patterns of creative intellectuals and other gifted young people.[52]

Fortunately, new educational programs aim to stimulate intellectual curiosity and independence. The new science and mathematics programs which have been developed recently have helped foster intellectual talent, what Bruner has called cognitive power, and have had considerable appeal for the more able and self-directed students. A recent progress report of the Panel of Educational Research and Development to the U.S. Commissioner of Education asserted that these "programs are directed toward the college-bound student and attract the more talented students. The PSSC course, for example, despite its great dependence upon laboratory work, appeals to those who cope best with the abstract and with the great generalizations. . . ."[55] Thus we might infer that at least the intellectually superior segment of the population has benefitted considerably from the new programs which present modern concepts in mathematics and science and which teach students to think like scientists.

The question the schools must ask is whether they can and do contribute a climate of sufficient challenge, freedom and encouragement to foster the excitement that keeps students learning all of the time. The science and mathematics programs perhaps contribute to this but we doubt if this is enough. Despite the efforts to change programs in social sciences, English and the arts, education generally falls far short of such goals. In fact, many observers find little evidence that schools actively foster intellectual curiosity and a spirit of inquiry. Instead, they reward the students who participate in social events and do their assignments with care. As Bay comments:

> The hunt for grades can be as much of an obstacle to intellectual growth as the striving for social popularity; both strivings are similar in that they aim at social acceptance instead of individual excellence of mind.[56]

The more able students are often not happy with this state of affairs. Dressel and Grabow sampled 502 gifted high school graduates from Michigan and reported that these students felt that their high school courses provided neither stimulation nor involvement, nor challenge.[57] Fishman and Solomon report that able college youth characteristically " . . . take issue with what they see to be the irrelevancies of much of the present-day education. To them it appears to be lacking in its ability to prepare them for 'the real world.'"[58] These and other studies seem to indicate that schools often do not offer the kinds of learning opportunities that appeal to gifted students. Such students characteristically want to discover themselves and what the world is all about, but do not find that such opportunities are offered.[59] Thus, motivation to learn and to behave in the creative intellectual style, may actually diminish as students progress through school.

2. The Affective Dimension--Creative Potential

There seems little doubt but that the cognitive powers as they are tested and demonstrated are more marked in able youth than was the case with their parents, and it is apparent that educational innovation has been mainly directed toward producing such intellectual change. May, writing in The American Scholar, terms the present a time of "quickening intellectual life and collapsing patterns."[60] The question as to whether young people can express themselves more creatively (inferring that they have more direct access to emotional potential) than in earlier decades is perhaps more difficult to determine.

There is much reason to assert that mid-twentieth century is an era of more lability of emotional expression than was the nineteenth or early twentieth centuries. The exploratory behavior expressed by an elite in the twenties is now acceptable to major segments of the larger society.* This may or may not be taken to indicate that there is more sensitive awareness of self and others and it may or may not relate to an extension of aesthetic expression and appreciation.

In the section entitled the Affective Dimension, we explored the human need for creative expression and the readiness of Americans to appreciate beauty and to accept the aesthetic and intuitive ways of understanding. We concluded that the shining vision that is needed for the future comes from an intellectual suppleness that is an aspect of creative expression. We feel that it is vital that our youth, if they are to move toward self-actualization, increase in perceptual receptivity and aesthetic appreciation. They must learn to reach out and grasp the beauty of the world.

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*Robert Havighurst, University of Chicago sociologist, recently commented that for many years it was impolite to talk in American society about either sex or social class, but that now sex has become a part of polite discourse, while social class is still a little obscene.[61]

Certain students appear to understand or accept the possibilities of cosmic consciousness and validity of such feelings as those expressed by Whitman decades ago:

> The ocean filled with joy--the atmosphere all joy! Joy, Joy, in freedom, worship, love! Joy in the ecstasy of life: Enough to merely be! Enough to breathe! Joy, Joy! All over Joy.*

Susan Druding, a young Ph.D. candidate in biology, spoke not only for many of her Berkeley counterparts but also for an increasingly idealistic student population throughout the nation, when she declared:

> I have great hopes for my generation, despite all the doomssayers. And even more for the next one. I think people are feeling more concern for each other every day. I'm convinced that we're all "destined for joy" as a French poet once said, even though there seems to be a permanent conspiracy against it.[62]

Many of the more able students are vitally concerned about the matter of incorporating more emotion and feeling into education. Our own research with gifted adolescents indicates that their need is to become personally involved with their education. Freedman** has found that able college students hope for an aesthetic and personal enrichment that college experiences rarely give them.[63] Two of the four goals which Freedman ascribes to the gifted students he has studied pertain to the matter of incorporating more feeling into education. One of these relates to the introduction of unity into the intellect and the personality. Students would seem to understand Murphy's view that every experience contains primitive sensory and visceral components as well as higher order constructs.[64] A second goal, the freeing of the impulse life of man, attributed by Freedman to the college youth, is made more specific when he says, "College students are increasingly unwilling to accept education as a grim competitive affair. They want more zest, more gusto, more life than has been available at most colleges and universities in recent years."[65] In wanting to partake of more experience, to make full use of the intuitive, subjective and emotional, and to experience more deeply, today's students seem to be accepting Hawkins' view that " . . . some things are best known by falling in love with them."[66]

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*Whitman was undoubtedly an unusual Victorian but expressed well the cosmic consciousness which emerged in unusual human beings throughout the centuries.

**The college students Freedman has described represent, he says, an avant-garde at the more prestigious colleges.

If we are serious about the cultivation of creativity and not merely infatuated with the glamour of the term, we must realize that it implies both self-expression and aesthetic development. It involves, for youth, intense and personal revelations and it means that as educators we must provide ways to cultivate an appreciation of art and beauty. A cursory review of public school curricula and teaching practices will reveal to the most casual investigator that there is little time or effort spent upon cultivating individual expressiveness and artistic appreciation. However, if we desire "full humanity," the creative potential must be developed. The inner self must be encouraged to emerge. The young person must be allowed and even asked to deal imaginatively with new ideas and experiences. Only by expressive growth, touched off by a desire to find fresh images and insights with which to understand reality, can youth gain a sense of self or a construct of the world in which he lives.

Unfortunately, as we have noted earlier, there has been little attention given by educators to the more humanistic and aesthetic aspects of the curriculum until recently. In fact, the school day continues to be loaded with mathematics and science offerings, that is to say, weighted toward the cognitive rather than the affective. Maslow indicates that pre-verbal thinking is often ignored or misunderstood and that schools, if they are to be adequate, must find ways to help children discover the richness and vitality that is within themselves. It is not only the children who find their expressiveness curtailed; artists also feel out of place in a technological society. Because of this, Krutch feels that those who express themselves creatively tend to feel "alienated" in our culture.[67] Thus, sending students to school is no guarantee that they will encounter conditions in which individuality and creativity will emerge. School rarely offers the time or the place for intense aesthetic involvement. Educators say that they want creativity, but there is often little effort to set the stage for it. The curriculum does not offer "equal time" for "falling in love"--either with the aesthetic endeavor or one's fellowman or woman.

3. The Social Dimension--Moral and Ethical Potential

The budding of a social conscience in this century and the apparent flowering of an intense altruistic and humanitarian awareness and concern in today's youth have been widely noted. The students which Freedman has studied seem to exemplify the qualities of creative intellectuals in the cognitive and affective mode. In addition, he reports that they have a strong social conscience and are asking for the establishment of the ethic of social service as a powerful motive in modern life.[68]

Pope, in an essay prepared for the Golden Anniversary White House Conference on Children and Youth, commented: "It seems obvious that the coming generation will be far more sophisticated about social possibilities than their parents were."[69] Five years later teenagers seem to be fulfilling this prophecy. A recent issue of Time reports that in 1965 "folk rock"--big-beat music with big-message lyrics--has taken over. These lyrics are concerned with everything from the P.T.A. to Viet Nam, from integration to domestic morality. As Time puts it:

> Where once teenagers were too busy frugging to pay much heed to lyrics, most of which were unintelligible banshee wails anyway, they now listen with ears cocked and brows furrowed. The rallying cry is no longer "I wanna hold your hand," but "I wanna change the world."[70]

This expression of social conscience now noted in the adolescent mass has been apparent for some time in the able college student. Freedman asserts that activities such as the Peace Corps and the Civil Rights Movement demonstrate that the ethic of social service has in recent years assumed more importance in the lives of college students. He concludes his remarks by saying, "I am convinced . . . that if we can refrain from blowing ourselves up in the next decade or so, college youth will make this a much better world."[71]

Sanford sees the aims of what he calls the "best students of the present generation" as quite different from the goals of the generation that now mans the establishment. He remarks that many of today's most able young people "want to be educators and reformers. They want to nourish their humanity and that of others."[72] Others have also documented this desire of able youth to serve and not just for a summer or as a pastime. Fishman and Solomon, in their discussion of pro-social values in youth, note, "youth are talking increasingly about fusing 'movement' work with a developing career line."[73]

That the students are responding in this way to the prevailing social and psychological stimuli is an empirical fact which we may or may not be able to explain now, but which certainly presents some interesting problems of prediction to social scientists. It seems reasonable to assume, as some social philosophers do,[74] that youth have especially sensitive antennae which attune them to social change.* Not only is youth aware of the wave front of change, but they may be producing it. Fishman and Solomon report that the social action of youth is making a difference in the society.

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*All the more reason to bring them into discussions and serious dialogues--and for educators to listen occasionally.

Students want to engage meaningfully in social action and they are also asking that education help them in finding ideals by which life can become more meaningful and values by which intelligent moral and ethical decisions can be made. They recognize the violence, the technological emptiness and the impersonality of the age but they resist bitterness and spiritual blight. They expect something more from life and many have asked for philosophy seminars and other ways to discover their better selves. Youth has an emotional hunger for belonging, for fidelity to a group, to an idea, to truth, to an ideal. They wish to become an integral part of something larger than themselves. Many accept and want to act upon the ancient Apostolic word: "Be ye not conformed to this world, but be ye transformed by the renewing of your minds."

If we see the social dimension as a vital aspect of student growth in the creative intellectual style, we must try to determine if specific efforts are being made, particularly by the schools, to foster such growth. Do we teach students to be responsible to others? Do we give them opportunities to exercise their responsibility in authentic social situations and to put their idealism into effect? Do we help students reach moral and ethical understandings about their own lives? Do we make adult models visible and available and thus give students templates against which to test their own values and from which to learn new ways of living, giving focus to their lives? Do we supply opportunities for discussion which help students learn to make choices based upon their values?

There is recognition that education must be concerned about these matters. Drucker believes that the education for tomorrow should deal " . . . not primarily with economic matters, but with basic values--moral, aesthetic and philosophical."[75] Unfortunately education has neglected these moral and social aspects of human needs. Taba asserts that the schools have neglected intergroup relations:

> . . . there is agreement that at present there are not enough skilled administrators and teachers to advance intergroup relations wisely. . . . [In the preceding decade there were efforts in this direction but this] is now slackening under the pressure of the movement "back to the fundamentals."[76]

And Mead comments on how difficult it is for adolescents to play meaningful and vital roles in the larger society: "So far very little participation has been offered to young people in the major task of our time, the absolute necessity of saving the human race from eradication."[77] She observes that youth often finds it dangerous and unacceptable to put idealism into effect. If, as Gardner asserts, man has always, " . . . shown a compelling need to arrive at conceptions of the universe in terms of which he could regard his own life as meaningful,"[78] we have done little to meet this need in our education of young people. As Gardner says, "Unfortunately we have virtually no tradition of helping the individual achieve such commitment [to the development of individuality, to finding universal meanings, and to employing his intelligence wisely in terms of the social good.]"[79]

Few schools provide opportunities for seminars or group guidance in which moral and ethical issues can be pursued and where the search for meaning is approved dialogue. Taba found little use being made of "guidance and counseling as a way of helping individuals and groups in school. . . ."[80]

Although there is much recognition of the need for adult models and philosophical guidelines, there are few efforts in our schools to introduce students to the type-specimen or the exemplar who by his very superiority can inspire able youth. As Mead has observed, " . . . goodness, to make an appeal to the . . . adolescent, must be cast in a heroic mold. If it is not, many of the most gifted will find all the ideals of their generation meaningless."[81] Not only must there be contemporary heroes for these young people, but these models must be presented appropriately. As Maslow commented,

> . . . imitation, even of such people ["saintly sages"], is a bad thing. The thing that seems to me to be most useful for post-pubescent kids is that it gives them hope--it is possible that there are such wonderful people. You can't think, therefore, that everyone is a bastard. Don't trust anyone, everyone is out for himself, watch yourself in the clinches, hit him before he hits you. You know, that sort of thing? But it is possible that human beings can be wonderful and our young people ought to know it."

Psychologists have been as unconcerned as educators and have given little emphasis in research and discourse to social concern, brotherly love and the search for self-actualization. As Maslow comments, "It is amazing how little the empirical sciences have to offer on the subject of love."*[82]

4. Motivation, the unifying aspect of the cognitive, affective and social modes

How can students be helped to develop and use these three modes of expression--the cognitive, affective and social? To develop the zest for learning and experiencing that permits expression of the creative intellectual style? To form the self conception that will bring stability and pattern to the striving for long-range goals and ultimate self-perfection, and that will lead to the development of a personal style in the creative intellectual genre?**

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*This was perhaps more the case in 1954 when Dr. Maslow expressed this concern. He stated that at that time only Symonds' Dynamics of Human Adjustment and Sorokin, in various writings, including Explorations in Altruistic Love and Behavior, were not silent on the subject of love. Since then we have had Fromm's The Art of Loving (1958) and a plethora of sex manuals which are now being excoriated as treating love as a "thing" or technique.

**It must be understood in what Allport has called propriate striving that the goals are never attainable, e.g., To develop the "other-regarding sentiments" that will make growth motivation and self-actualization possible?

The most important consideration, as we contemplate growth potential in the direction of the creative intellectual style, is the motivation of the individual. We see this deriving from interests and abilities which we have discussed under the cognitive, affective and social modes of expression. In terms of motivation itself we accept the higher order striving which Maslow has termed growth motivation as most descriptive of the process of becoming which we see as central to the creative intellectual predisposition.

As we study the able adolescent in the secondary school setting we can perhaps make this general statement more meaningful. Growth motivation, when applied to the young person in school, must be viewed in the most general terms. In other words, we feel that it is not appropriate to discuss motivation as a minor technical problem that can be dealt with by giving gold stars and "A's" for effort. We hold it to be, instead, much broader in scope, probably embracing many aspects of the environment as well as some fundamental individual variations--innate differences in awakeness, awareness and total sensitivity. The way we educate and challenge, the models we supply (does the teacher stir the imagination?) and what we value in our society will all make a difference and must be kept in mind if we want to rescue the talented from a lack of focus, lowered aspiration and habits of mediocrity. For those who characteristically lack zest--who either plod or lack persistence--Goethe's statement may suggest appropriate treatment: Treat a man as he is, he will remain as he is; treat a man as he could be and should be and he will become as he could

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the scholar's discoveries lead to more and more questions, etc. It should also be noted that Jung defines personality similarly--as an ideal state of integration toward which the individual is tending, not the accomplished fact but the projected outcome of growth.

and should be.

Zest for learning is often much nearer to the surface than we ever realize. When given a chance to become involved with important thoughts and issues through philosophical seminars, group discussions and independent study, gifted students generally show high motivation. Our own research conducted in the Lansing Public Schools has indicated that a large proportion of able ninth graders are deeply interested in learning and the pursuit of ideas. A careful study of the protocols of their recorded class discussion shows that they can handle important concepts and basic social issues easily and that they want to deal with matters of consequence.[83]

Motivation to learn involves a zest for the task at hand and an ability to lose oneself in one's materials, in a state of being as it were. However, for the most basic form of motivation there must be an acceptance of "becoming" as well as "being." As Allport says, mature striving is linked to long-range goals. He continues:

> [the] process of becoming [is] . . . a matter of organizing transitory impulses into a pattern of striving and interest in which the element of self-awareness plays a large part. . . . From adolescence onward, however, the surest clue to personality is the hierarchy of interests, including the loves and loyalties of adult life. When we know a person's ordo amoris we truly know that person.[84]

D. An Approach to the Study of the Creative Intellectual Style

There are many ways to understand human development. However, we need to have, if we are to gain insights into the more advanced kinds of such growth, more than descriptions of structures and mechanisms. The major emphasis of psychology for many years has been objective and operational. Excellent tools of inquiry have developed out of these behavioristic and logical-positivistic approaches, but these emphases upon physiology and behavior have made it difficult to study the most important aspect of being human--the inner experience. Psychology could be criticized much as Dubos has criticized biology, a science which has been immensely successful in describing the elementary structures and processes of the body machine, but has tended to neglect the study of living as experience.[85] Sanford contends that researchers who fragment the human being and study the "bit" or "part" or "variable" may claim that they will later put these parts together and in this additive way get a picture of the whole. He holds this reasoning faulty on two counts: (1) we cannot assume that the parts will add up to any meaningful whole, and (2) most psychologists whose studies are atomistic make little effort to formulate the meaningful generalization.[86] Maslow says much the same thing:

> Many psychologists are content to work with but a portion of the human being, indeed making a virtue of such limitation. They forget that ultimately their task is to give us a unified empirically based concept of the whole human being, i.e., a philosophy of human nature. This takes courage and demands a willingness to step away from the narrow platform of certainty. Such certainty is of necessity narrow, for the reason that our knowledge is insufficient to allow us to be sure of anything but small bits of the complex human problem. . . . The fear seems to be that once we admit creativeness we may involve ourselves with all sorts of poets, artists, musicians and other questionable people who don't have a Ph.D. in psychology and are therefore clearly social climbers without any right to know anything about human nature.[87]

"The study of lives" is a phrase often used by Murray to express his conviction that living beings must be studied as living wholes.[88] Certainly not all research can or should take the form of collecting life histories; however, we contend that studying the isolated and fragmented bits of many people does not give us the most basic and needed answers. Fortunately, psychology is perhaps because of the influence of those with clinical training,* beginning to give increasing recognition to the reported experiences of human beings and to phenomenological subject matter in general. As Koch reported in his Epilogue to the three volumes of the APA's Study I, "an important and quite general trend of the essays is an increased recognition of the role of direct experiential analysis in psychological science."[89] As psychologists deal with introspective reports and recognize that the data of psychology can consist of inner experiences rather than simply overt observables, the practitioners not only take on more difficult conceptual and operational tasks but also move toward more comprehensive and socially significant findings. Such research is simply more true to life. As White says, a phenomenological approach such as the study of lives, " . . . is neither rapid nor easy, but it has the supreme virtue of being adapted to the nature of its subject matter. It keeps specific findings from falling out of the life configuration that gives them significance."[90]

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*Bruner, the present president of APA, and Hobbs, the incoming president, exemplify this trend.

In an earlier book, White has pointed up the social significance of such studies and stressed the need for a more complete understanding of modern man and of human nature, noting particularly that:

> Now that man has become so troubled about himself, so alarmed at his ineptitude in organizing a social system to suit the small world created by modern communication and modern scientific discoveries, he urgently needs to know more about his own potentiality for constructive growth. He can no longer afford to distort the universe by knowing truth partially, to distort his self-knowledge by leaving out those very features of his development that give him a chance to guide his destiny. He deserves a picture of himself that will not omit the higher human qualities of trying to understand things and change them for the better. . . . [And yet] there are scarcely any systematic case records of great fortitude, rare heroism, unusual contribution to the arts, of special success of grasping and solving important social issues. The natural growth of personality and the higher flights of human achievement have been given almost no representation in man's current ideas about himself.[91]

The need then is for psychological studies which will give us more comprehensive insights into human functioning and supply frames of reference in which we see man encountering experiences and which will also lead us beyond the present into understandings of human potential. We hold that man's essential being is not in any fixed endowment, but in the 'becoming' he accomplishes with the raw materials of his life.

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II. INSIGHTS, THEORY AND RESEARCH FINDINGS RELATED TO THE CREATIVE ADULT

Studies of creative and productive adults, particularly those reported by MacKinnon and his associates[1] and Roe,[2] have suggested certain dimensions which have helped to give us focus in our depth studies of creative intellectual adolescents. Roe has done careful psychological studies on the background and the personality characteristics of outstanding male scientists and the extensive studies of MacKinnon et al. have included not only research scientists, but also creative writers, mathematicians, graduate students, medical students, architects, and military officers and personnel. Research done in a somewhat similar style on the college student and conducted by McConnell and his co-workers has also been helpful.*[3] In addition, we have gained insights by reviewing the work that Maslow has done on self-actualizing adults[4] and also by drawing from the area of investigation often termed the "study of lives," particularly as this has been defined and pursued by Murray[5] and White.[6] We will make some direct reference to information reported in biographies of highly gifted people and will particularly use this as illustrative material. In addition, we will allude to an extensive psychological-biographical study of four hundred eminent people by the Goertzels,[7] and to a similar study conducted by Cox.**[8]

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*We have used the Omnibus Personality Inventory developed by this group of researchers (for their studies of gifted college students) to help us gain insights into creative intellectual development in younger adolescents.

**We will also draw occasionally from Terman's classic longitudinal study of fifteen hundred outstandingly able California school children selected in the 1920's. These teacher-nominated children were chosen on the basis of Stanford-Binet IQ's of 140 or over.[9]

In the review of these materials our effort has been to extract some of the more characteristic features of these outstanding individuals which were apparent as they developed and when they reached maturity, and to draw from these common traits and modes of adjustment that would be helpful in studying the gifted adolescent. We wanted to know how the childhood of adults who achieved eminence differed from the early years of their contemporaries, and to better understand the personality and motivational qualities evidenced by these adults that set them aside from their fellow men. We will use non-abstracted material from biographies to try to avoid the lifeless and mechanical effect that lists of traits can produce. The portrayal of a model of man with nothing inside would do a gross injustice to these complex and idiosyncratic individuals.

At the outset of this review, it must be clearly understood that any insights which we claim must be regarded as tentative ones. We do not know how many of the inferences we draw from both the biographies and the adult assessment studies can be applied to the young for a number of reasons. These studies of creative adults are retrospective, and memory at best is partial and more or less distorted. Another matter that makes prediction of the behavior of the young from "facts" about their elders difficult is that the Weltanschauung is changing rapidly. Bettleheim includes this in his discussion of "the problem of generations."[10] Finally, and perhaps most importantly, is the fact that, although there are several excellent and extensive studies, the total volume of the work leads us to conclude that there has been relatively little research done on the creative adult.

As we consider what needs to be understood if we are to reduce the unknowns in the developmental study of personality, it is quite apparent that many questions have not been asked in the ongoing studies and that the answers to formulated questions are still far from complete. In addition, the samples of creative adults studied represent only a very small proportion of all who might be chosen as creative. For example, a large number of studies have concentrated on scientists, and most of the original and effective individuals selected for such studies have been men. There have been few investigations of the socially creative and of those with a humanitarian bent beyond Maslow's study of self-actualizing adults, and too little research has concerned itself with creative women. In spite of the deficiencies of the studies which describe creative behavior in adults, they represent pioneer efforts in an important area and, as such, can serve as a valuable frame of reference for an even less frequented area for study--creativity in adolescence. Biographies add another dimension and represent the art rather than the science of trying to get into an individual's skin, share his fears and hopes and the intense experiences--loneliness, joy--that change him. The focus throughout is with the interior life.

A. Childhood of Creative and Eminent Persons

We have concluded from our reviews of the studies of the creative adult that an environment that is free and accepting, responsive and evocative is a vitally important factor in the development of effective and productive behavior.[11] As we reviewed these reports, our decision was to define environment broadly and include within its boundaries not only the unusual opportunities for learning, including exposures to a rich and complex culture, but also the adults who play significant roles.

1. Acceptance and Freedom in the Environment

The studies generally demonstrated that an environment which is at once accepting and free is of primary importance as a means of meeting certain basic needs for all children.* In the early environment of most of these creative and eminent adults, there was at least one person who had been supportive, nurturant, and/or affectionate. It did not seem to be necessary for there to be many sources of support and encouragement but it appeared essential that each have a source outside himself at some time during the formative years. Beyond this atmosphere of acceptance many of these adults seemed to have enjoyed more than the usual amount of freedom as they grew up. This freedom allowed the individuals to develop in unusual and idiosyncratic ways. Roe found that most of her eminent scientists were placed on their own resources a large amount of the time and often very early. MacKinnon reports that the highly creative architects he studied enjoyed exceptional freedom and opportunities for self-development. In addition, he observes that there was a "certain distance in the relationship of the child to his parents [but also] . . . an absence . . . of psychological exploitation. . . ."[12] The

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*Many psychologists have dealt with the concept of basic needs. The particular concept referred to in this context is Maslow's "hierarchy of basic needs." The basic needs are physiological, safety, belongingness (love), esteem, and self-actualization. These are organized in a "hierarchy of prepotency" and their gratification is understood in terms of "degrees of relative satisfaction." This means that physiological needs (i.e., hunger) must be somewhat satisfied before the need for safety arises, that an individual must feel relatively safe before the love of others is needed, etc. Until the basic needs have been satisfied, an individual's behavior is referred to in terms of "deficiency motivation"; on the other hand, when those needs have been gratified, behavior is thought of in terms of "growth motivation"--the distinguishing characteristic being the freedom to cope more efficiently with external (to the organism) situations, having been freed of the demands of lower needs.

The careful reader will note that Maslow's idea will be used extensively as a point of reference. The rationale for this is twofold: (1) His assumptions, procedure and conclusions are similar to those of the researchers, and (2) While others have advanced theories similar to Maslow's, clarity demands a single frame of reference yielding a consistent pattern of terminology and concepts.[13]

Goertzels note that among their four hundred it was not uncommon for young children to be sent away from home for special schooling.

This environmental freedom means, then, that the parents of these children accepted a wide range of behavior and also allowed their children to spend much time alone or away from home. MacKinnon's finding that three-quarters of his creative architects were introverts as adults may be relevant. He notes that "experiences of aloneness, shyness, isolation, solitariness . . . were common."[14] It cannot be concluded that these experiences were distasteful although Taylor* observes that most teenagers feel psychologically naked unless they are in a group of four or five. A number of these adults in their early childhood seemed to develop a liking for solitude. Robert von Neumann, the artist, whose style of life was portrayed in the Being and Becoming Film Series, reported:

> At nine or ten my parents moved into the country along the side of a river--there were swamps very close and it was a very simple matter to change human companionship for a great variety of animal and bird and insect life (which have been inspiration for my art all through my life). I never felt lonely or that I was missing something to not be in the teenage crowd. I occasionally explored the countryside with a few friends.

Carl Sandburg once called such an opportunity for a personal retreat "creative solitude."

We do not know, of course, whether these people sought out solitude or were forced into it initially. The Goertzels reported that many of the eminent adults whom they studied had been rejected by playmates when they were children. Roe observed that a high percentage of her scientists had lost a parent early in life and, as was noted above, were on their own a great deal in their youth.

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*Harold Taylor, former president of Sarah Lawrence, was the philosopher in Film Number Nine of the Being and Becoming Film Series.

After reviewing the life histories of eminent adults Barron has observed:

> A person who is neither shy nor rebellious in youth is not likely to be worth a farthing to himself nor to anyone else in the years of his physical maturity.[15]

As a child Eleanor Roosevelt described herself as both shy and awkward. She felt she was unattractive, bad-mannered and, perhaps, unlovable. Crushing events in these early years may well have added to the burden of self-doubt--the death of her beautiful mother when Eleanor was six, of her adored father when she was nine, and of the older of her two little brothers soon afterward. Yet despite these events she was able to find solace in books and learning. She became a confident, buoyant and independent student when she entered a school in France at fifteen and eagerly explored Florence and Paris by herself at sixteen when she toured Europe with a much-loved teacher. Suffering may well be, as Frankl has suggested, one route to creative fulfillment.[16]

As we reviewed the life histories of outstanding adults it appeared almost axiomatic that all had loved to read as children, but that love for school and formal academics was another matter. School was frequently seen as a dreary routine, confining and sometimes inane. The Goertzels noted that a large proportion of the individuals in their study actively disliked school, although Roe reports that her scientists enjoyed their academic pursuits.* In any event, whether independent study and seclusion were first sought or whether such isolation was imposed by circumstances, creative adults seemed to accept and profit by opportunities to be alone when they were children. The need, desire and capacity for self-communion apparently was developed early in the lives of these individuals. Helen Keller and Helen Hayes both commented in their reminiscences of childhood that sharing the language of cultivated adults through the written and spoken word gave them the finest of thoughts to recite and reflect upon in mental rehearsal in the hours which they spent alone. Miss Hayes spoke of the insight of her acting coach, Constance Collier, who understood that whether or not the eleven-year-old Helen comprehended what she was reading, she was acquiring a taste for good words. When adults complained about the child being asked to memorize the intricate, sensual and incomprehensible "Ode to a Nightingale" by Keats, the drama coach replied that it did not matter whether she understood. What did matter was that when she was alone with nothing to do--instead of some cheap little tune running through her head, she would have those lovely words in there.

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*There seems to be considerable evidence that scientists, even highly gifted ones, are more studious than many other adults who attain eminence in later life. A recent study of graduate students showed those majoring in science liking graduate school a very great deal better than those students enrolled in humanities and the arts. It is also common knowledge that artists and writers frequently drop out of school, whereas it has become almost a truism that successful scientists today hold the Ph.D.

Helen Keller, almost immediately upon learning to read braille at age seven, preferred reading to herself over being read to. She liked to wander from bookshelf to bookshelf, sampling at will even if she understood "only one word in ten or two words on an [entire] page." The barely understood became, by some miraculous process, almost completely usable. Miss Keller reported, "Everything I found in books that pleased me I retained in my memory." She speaks of retaining whole sentences which she could not comprehend at the time and yet afterward when she began to talk and write, "these words and sentences would flash out quite naturally, so that my friends wondered at the richness of my vocabulary."[17]

An article in Harper's, written about Miss Keller when she was sixteen, commented that her mind had not been vitiated by the banal and base. She was in love instead with "noble thoughts and with the characters of noble men and women." Talent for symbol usage and great plasticity (both human qualities) helped make her the kind of human being she was capable of becoming. Her direction of development was, in these formative years, precariously dependent (as is true with all children) upon the kind of ideas and images that found their way to her mind. In Helen's case these exposures were, for the most part, to the finest examples of human growth and expression and undoubtedly contributed to her loving-kindness, her curious and active mind and her receptiveness to beauty.* Through her reading and the people that she knew she had early developed a deep commitment to larger meanings of an aesthetic and philosophical sort.

2. Responsive and Evocative Qualities in the Environment

Not only did the studies reviewed indicate that an environment that was both accepting and free offered certain basic securities that are requisites for all children, but it also became clear as we sifted through the published reports that many of the environments were remarkably responsive to the needs of the children, in terms of supplying answers to their questions, materials for them to work with, and--as we have observed--books for them to read. The importance of an intellectually responsive environment has been discussed by many psychologists and social scientists, and our evidence would seem to support this conclusion. However, the biographies of eminent people show that their early environments were actively evocative as well as pliantly responsive. These environments abounded in richness, complexity and challenge and did far more than supply answers to the child's questions.

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*It is interesting to reflect upon MacKinnon's report that the highly creative adults in the IPAR studies have had unusually vivid and accurate childhood memories. Was there an unusual mental plasticity or were the materials that were stored particularly rich and meaningful?

Generally speaking, a responsive environment could be said to be a good learning climate. In such environments, parents and other adults try to respond to the child's inquiries and his independent efforts to make discoveries. When such information is at a high level of excellence and has its own charm--beckoning and holding power--we feel the environment could be called evocative as well as responsive. In other words, it does something more than give adequate and responsible answers to a child who has been the primary instigator. A utopian conception of a learning environment would include opportunities offered for the child to engage in the great conversations of the time and, occasionally, to join in the dialogues out of the past. It would offer and introduce to the child adult models who exemplify many varieties of excellence and fine libraries, museums and laboratories. Maslow describes the ideal education as follows: "It is life-long, it is organismic--not just verbal or bookish--it is ubiquitous, and it must be intrinsically rewarding."[18] In such an environment the child would meet his culture in its most appealing and exciting patterns at concerts and lectures, where he would be accompanied by adults who are genuinely engaged by these intellectual and aesthetic experiences themselves.

The environment of most of the outstanding individuals who were children in the nineteenth century and earlier was both responsive and evocative.[19] When young, these people were introduced to the current artistic and scientific cultures through excellent libraries, highly qualified tutors, and interchanges with gifted parents and family friends. Goethe was often accompanied by a secretary who recorded his remarks (certainly an indication that what Goethe had to say was worth listening to). John Stuart Mill was asked to write scholarly papers on the same topics his father pursued and these papers were carefully read and criticized not only by his father but other scholars as well. Bertrand Russell, an orphan at three, did not attend school until he entered Cambridge at the age of eighteen but he had free access to his grandfather's fine library (his grandfather had been a liberal Prime Minister of England). Prior to Cambridge, Bertrand was tutored and had the opportunity to engage in many interchanges with his relatives and learned family friends. As a Cambridge undergraduate, he was given almost immediate recognition by a professor, Alfred North Whitehead, and the two were soon co-authoring learned treatises, a collaboration which culminated in the publication of Principia Mathematica.

Others who have made unusual conceptual contributions benefitted from the richness of family tradition as well as from the availability and evocative qualities of scholarly materials. There were many outstanding individuals among Frank Lloyd Wright's relatives, a tightly knit Welch-Unitarian group that had settled in a Wisconsin valley. His uncle was a close friend of Jane Addams, his aunts were talented, active and outspoken, and his father--although he did not achieve renown--gave continual drama to the creative process by his efforts in the graphic arts, his poetry (which he sometimes presented in public recitations), and his sermons (delivered when he was intermittently employed as a minister). Charles Darwin undoubtedly benefitted from the work his grandfather, Erasmus, had done and in many ways built directly on the older man's theories which were as strongly held and as unconventional as those of the younger Darwin. According to the Goertzels, one-half of their eminent subjects came from opinionative families in which scientists, humanitarians and reformers dominated the scene and expounded regularly. One of the most unusual and fruitful of educational and total environmental patterns was that experienced by William and Henry James. Their father described his vocation as follows:

> Say I'm a philosopher, say I'm a seeker for truth, say I'm a lover of my kind, say I'm an author of books if you like, or best of all, just say I'm a student.[20]

From this viewpoint it seemed a natural step that father and sons would spend a decade (the boys' adolescent years) studying and living in mid-nineteenth century Europe as well as in examining the Western intellectual heritage in many languages and many disciplines.

Both Julian and Aldous Huxley grew up in an atmosphere that elicited many intellectual and creative responses. Their grandfather, Thomas Huxley, unquestionably provided them with a model of excellence in the scientific realm and their environment was filled with adults of eminence in the area of the arts as well. Aldous was a grandnephew of Matthew Arnold. As a result, Aldous, the novelist, and Julian, the biologist, were able to bridge the gap between the two cultures and become gifted generalists.

When we study what White calls the "higher flights of human achievement"[21] it seems that such individuals benefitted from their heritage of a milieu that was both economically and intellectually rich. However, there have been gifted young people from relatively barren environments who were fortunate enough to have been recognized early and transplanted into situations that by their great responsive and evocative power would seem to have allowed the gifts to be more fully realized. Michelangelo, as a fourteen-year-old, was already a recognized sculptor and draftsman and, as a protege, sat at the dinner table of Lorenzo the Magnificent, listening to the conversations of some of the most gifted men of Europe.

In some homes that were economically impoverished, certain gifted young people found intellectual encouragement. Although Charles Dickens came from a home where the poverty must be described as desperate (his father was sent to debtor's prison when Charles was ten years old), there was always an interest in learning. In fact, Charles' mother began to teach him at age four. In addition to this teaching at home, he had only a few years of formal schooling. However, one of the most noteworthy parts of his environment was the fact that he had learned to read early and had read such books as Tom Jones, The Vicar of Wakefield, Don Quixote and Robinson Crusoe by the time he was seven years old. When he was a teenager, it was said that "he educated himself" through assiduous attendance at the British Museum reading room. There were other aspects of responsiveness in his environment. His parents, friends and associates greatly enjoyed the stories he invented and told and all that he wrote. During the years he attended school (between twelve and fourteen years of age) he wrote small tales and took the lead in theatricals among the boys. Between the ages of seventeen and nineteen, he was a parliamentary reporter and by the time he was twenty-one, he had published his first literary sketch.

In the twentieth century, outstanding teachers, excellent libraries and bookstores, as well as laboratories and studios have served to supply gifted young people with the answers to their questions and to suggest new queries. Again we see a penchant for reading as the talisman of talent. Roe and Goertzels report that most of their subjects early became avid readers and almost all came from homes that valued learning. Enrico Fermi and a friend were reported to have haunted the book stalls of Florence searching, as teenagers, for unusual treatises in science. Whitehead mentioned that he felt that "initial momentum" was of great importance if there was to be later productivity of note and cites the case of Harvey Cushing who was far advanced in his understanding of medicine at age seventeen because he had been closely associated with his father and grandfather who were outstanding physicians.[22]

Early opportunities in the arts have also been noted for those who attained eminence in this area. Almost all of MacKinnon's architects had at least one parent with strong artistic interest and/or talent. As MacKinnon puts it, "In most cases one or both of the parents were of artistic temperament and considerable skill. Often it was the mother who, in the architect's early years, fostered his artistic potentialities by her own example as well as her tuition."[23] There seems no doubt that the home for most of these eminent people was an important and sustaining influence.

We have discussed the elan and the excitement that was apparent in many of these environments and which appeared to be significant in the development of the creative intellectual style. We have seen these external factors as strong and pervasive. Given this dynamic, we ask what are the emergent personal qualities in the adult which are characteristic of this creative style of life. Our effort in the next section has been to extract certain ones that appear to be significant in the lives of almost all creative adults.

B. Adult Attributes of Creative and Eminent Persons

In a review of these materials, it becomes clear that there are certain qualities that are quite consistently found in creative adults. However, arriving at meaningful generalizations about such people is not easy. We might say that they are similar to Maslow's group of self-actualizers in that

> . . . they are simultaneously very much alike and very much unlike each other. They are more completely individual than any group that has ever been described, and yet are also more completely socialized, more identified with humanity than any other group yet described.[24]

We will, however, attempt a synthesis and suggest traits that seem most universal. One observation made in a number of the studies concerned with productive and recognized adults is that these individuals who produce in ways that are highly valued by their societies are also gifted intellectually.[25] Another finding has been that the highly creative individual is also apt to be psychologically healthy. In other words, he is seen as developing in optimum ways, especially in the direction of maturity and self-actualization. The terms used by "third force" or growth psychologists to describe psychological maturity--such as openness to new experience, intellectual orientation, and autonomy--are synonymous with the descriptive terms of the researchers and theorists concerned with creativity. This emphasis on the positive relationship between creativity and mental health is in direct contrast to the idea that genius is related to instability or even insanity,* an idea that has been well entrenched in the popular mind and which was encouraged by such early writers as Lange-Eichbaum[26] and Lombroso.[27] However, Barron reports that many highly creative individuals do have qualities, such as willfulness or high impulse expression or seemingly disordered ways of living, which are in contrast to the usual smooth functioning that has been termed good adjustment. But in the case of these highly creative people, their "maladjustments" do not become debilitating. It is not that they do not have "problems"--they do; they seem to be able not only to cope with them, but perhaps even to benefit from them. Barron has commented that the highly creative people in his study are, in fact, "crazier and saner" than the average person.[28]

Related to this is Maslow's view that the resolution of dichotomies is characteristic of self-actualizing people. Psychological characteristics that are found to be antagonistic in normal or unhealthy persons are found to be compatible in the creative person. Many of these contradictory qualities which become synergic in self-actualizing people and, to perhaps a lesser extent, in all highly creative people can be discussed under the dichotomous qualities often held to be either masculine or feminine. Our studies have led us to agree with the findings of Maslow and Barron that highly developed individuals are apt to be simultaneously masculine and feminine. In other words, within this creative-intellectual subculture, the adults tend to transcend sex stereotypes. The male and female creative styles become more like one another as creativity becomes more marked. Such highly creative people are individuals of complex personality structure--simultaneously masculine and feminine, independent and dependent, detached and involved, rebellious and accepting, ruthless and kind, aggressively extrovertive and contemplative, self-confident and self-critical, active and passive. In terms of intellectual expressiveness, the creative person typically lives comfortably with many polar styles: creative and intellectual, cognitive and affective, logical and intuitive, structured and open, specialized (specialist) and general (generalist), scientific and humanistic, theoretical and aesthetic, realistic and mystical, abstract and concrete, being and becoming.

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*We cannot completely discount the idea that many geniuses may be mentally disturbed. However, even if we accept that this has been the case, we need not also accept it as predictive of the lot of creative people in the future. The world has been actively hostile to the innovator throughout recorded history. His presence upsets the routines of living and serves to remind all those who simply want to get on with living that they might do and be something more if they had the will and the wit. Some social revisions along suggested utopian lines might result in a genius population without serious psychological wounds and scars.

More specifically, the men frequently show an aesthetic sensitivity and an awareness that has been termed feminine. Many are inclined toward poetry and philosophy, and at least some are humanely concerned and surprisingly lacking in prejudice. These qualities are sometimes apparent in scientists and mathematicians, as well as in artists, writers and musicians. Although the culture labels these attributes feminine, the males who possess them are often described as highly independent and achievement oriented; in other words, masculine.

Highly creative women who have won recognition for their achievements are found to be similarly complex. Many of them are willing to break with convention and become intellectual, independent and determined. At the same time, a review of the literature reveals that most of the truly outstanding women remain aesthetic, humane and intuitive.

These persons have resolved not only many sex role polarities, they also ignore traditional boundaries of time and emotion. They are feet-on-the-ground realists and head-in-the-clouds idealists who live in the past, present and future. It would seem that childhood need not be abandoned for adulthood or maturity, for these persons are simultaneously innocent and sophisticated, frivolous and serious, impulsive and disciplined, casual and intense. The spontaneous and fantastic are rarely suppressed by a regard for traditional standards of decorum or dignity. A compulsion for emotional consistency is not characteristic of these highly creative people.

Furthermore, they do not find their concern for society and mankind in conflict with personal desires and can be at once idealistic and selfish, idiosyncratic and cooperative. This, no doubt, contributes to their ability to conceive of and act upon long-range goals with unusual dedication and commitment. A fund of ego strength would seem to sustain these individuals and continually replenish the psychological reserves and resiliency necessary for dealing with a complex self and a world in need of guidance. For they not only tolerate inner diversity but also take upon themselves very large burdens in the name of humanity. They shoulder their missions with a "sense of destiny" and a feeling that they can make a difference in the world. There is a notable lack of capitulation to what Allport designates as tribal morality and Maslow has called enculturation. These qualities are apparent in men and women alike.

Margaret Fuller, when predicting the eventual emergence of American literary genius, commented:

> It is sad for those who foresee, to know they may not live to share its glories, yet it is sweet,

> too, to know that every act and word, uttered in the light of that foresight, may tend to hasten or ennoble its fulfillment.[29]

Albert Einstein was widely recognized for not only his genius but also as a self-actualized person with excellent mental health. Levinson remarks that although Einstein was shy and gentle and sometimes remote from others, he had a wide range of interests--many friends, his work, music, the sea and other phenomena of nature.[30] His friend T. H. Bucky commented that Einstein had come to terms with himself and the world around him. He knew what he wanted and he wanted only this: to understand within his limits as a human being the nature of the universe and the logic and simplicity of its functioning. He knew there were answers beyond his reach, but this did not frustrate him. He was content to go as far as he could. Einstein's friend, Albert Schweitzer, although presenting an image at once more austere and more authoritarian than that projected by Einstein, was equally concerned about making fundamental contributions to humanity. As Cousins comments:

> The main point about Schweitzer is that he helped make it possible for twentieth-century man to unblock his moral vision. . . . The greatness of Schweitzer--indeed the essence of Schweitzer--was the man as symbol. More important than what he did for others was what others have done because of him and the power of his example.[31]

As adults they are highly autonomous but as MacKinnon observed, their independence is in the realm of ideas rather than of behavior. In this realm they are courageous and willing to risk much in the pursuit of understanding and what they hold to be truth. John Stuart Mill, after long consideration of the rather enigmatic problem of human happiness, concluded that the greatest and most lasting happiness derived from the contemplative life; from the exercise of the intellect and of the emotions as they interfuse and harmonize with the intellect. He writes:

> A cultivated mind . . . finds sources of inexhaustive interest in all that surrounds it; in

> the objects of nature, the achievements of art, the imagination of poetry, in incidents of history, the ways of mankind, past and present, and their prospects in the future.[32]

It becomes clear, then, from the review of the literature on such adults that one of the characteristic orientations of creative intellectuals is that of preoccupation with ideas, not just occasionally or often, but continually. It is an enthrallment that grows and endures for the lucky ones all of their lives. As he was dying John Dewey avidly read the dictionary and savored the infinite forms of expression available to all men who read. In like manner, Oliver Wendell Holmes once said, when asked about his amazing accomplishments that continued until he was well past ninety, "It is necessary to care desperately and to care all of the time." It is said that Newton discovered the law of gravity by always thinking about it. At some time during their development, these unusual people acquire a deep need to continually relish and reformulate ideas. They may or may not be facile in expressive modes, but there is always a profound and continuing commitment to the contemplation of ideas which interest them, and they tend to be interested in concepts and generalizations that will give them an ever greater comprehensivity in the understanding of themselves and the cosmos. Many of them, as did Schweitzer, felt a supreme identification with other human beings. Teilhard deChardin was also profoundly attracted to the more fundamental aspects of human existence. He particularly contemplated the evolutionary process which leads to new types and higher degrees of organization, new patterns of cooperation among individuals, and new ways of coming to human fulfillment.

Maslow has placed the search for knowledge next to the summit in his hierarchy of needs, transcended only by the desire for beauty. As we noted earlier, "mere reason" is not held to be enough by the most productive and broad-gauge geniuses. They also want elegance and refinement, on the one hand, and, on the other, move to an almost mystical acceptance of the place of emotion and passion in the human life. This more advanced developmental characteristic of the gifted generalist, the great humanitarian, the philosopher and the mystic is more apt to emerge in the middle years of life. Bucke found few examples of "cosmic consciousness" below the age of thirty-five and Maslow's self-actualizers were usually at the prime of life or beyond.[34]

The creative contributor is not time bound; his mental eye scans the dimension of time as far as knowledge and imagination will take him into the past and into the future. The effort is always to achieve a more comprehensive world view. Russell notes, as he discusses remarkable individuals who have tended to mold the history of their eras, that they are concerned with the larger meanings, with the ultimates of human existence. A narrow, partisan, provincial, confined, rigid, or illiberal way of looking at themselves, society and the cosmos is unsatisfactory; they strive for a world view, a Weltenschauung that is as comprehensive as possible.

The concern with mental life and ultimates notwithstanding, the generality of creative and self-actualizing adults are intensely involved with many aspects of their immediate environments. Maslow has commented that they are realistically oriented and accept themselves, others and the natural world. This is done with spontaneity and an enduring appreciation for the everyday aspects of life. As he remarks, "Self-actualizing people have the wonderful capacity to appreciate again and again, freshly and naively, the basic goods of life, with awe, pleasure, wonder and even ecstasy. . . ." He continues, "It is probable that this acute richness of subjective experience is an aspect of closeness of relationship to the concrete and fresh. . . ." William Blake expresses this:

He who kisses the joy as it flies
Lives in eternity's sunrise.

Thus this openness to the inner and outer worlds by a mind that is fully alert and free to express itself merges with an ability to have profound spiritual or mystical experiences.

It is also quite clear that these adults who are notably creative and/or self-actualizing are unusual in the physical sense as well as in the intellectual, emotional and moral realms. Their high energy level, zest for life and excellent general health has been noted by psychologists[36,37] who have made careful studies and is also apparent to even the occasional reader of the records of the higher flights of human achievement. By studying these we come to comprehend the almost unlimited strength individuals such as Schweitzer have brought to bear on the achievement of human oneness. It is this quality that would seem to have made it feasible that such an individual could have created a difference in the lives of everyone, but it is also possible that these rare individuals have garnered and enhanced their strength and vitality by using it to advance the human condition.

In summary, we have reviewed what we consider to be pertinent psychological studies and biographical data with an attempt to discover how these might contribute to the understanding of superior adolescents. The generalized description of the creative intellectual as being much like Maslow's self-actualized adult, i.e., an individual who is highly developed in cognitive, affective, and social modes. This, then, is the prototype-ideal or the universal identity. In terms of human realities, each creative intellectual would not only be much like all others, but he would also be very different.

Obviously no individual, not even the greats from history, fits the idealized construction in all respects. The type specimen creative intellectual or the fully self-actualized person are artifacts. However, such a balanced development was esteemed by the Greeks just as the beautiful person of the Hebrews and Chinese was said to combine great strengths in the three areas. In the above ways all highly creative people--men and women, old and young, artists and scientists--have much in common. They also exhibit greater distinctiveness than any other group. All show a wide range of values and capabilities which encompass masculine and feminine characteristics. And with a few, this extends beyond self-expression to a genuine social concern. The concept of the self-actualizing and fully-functioning adult embraces these ideas. This self-actualized individual has been seen by Maslow as relatively rare and as having an unusual and complex personality. As he says,

> In these healthy people we find duty and pleasure to be the same thing, as are also work and play, self-interest and altruism, individualism and selfishness. We know that they are that way, but not how they get that way.[38]

The review of research concerned with able adolescents that follows presents an effort we have made to find out more about the creative disposition and style in the high school years.

II. INSIGHTS, THEORY AND RESEARCH FINDINGS RELATED TO THE CREATIVE ADULT

1. For more than a decade, MacKinnon and his associates have made extensive studies of the personality characteristics of creative people. A variety of papers representing their work is available in the publication, *The Creative Person* (A conference presented at the Tahoe Alumni Center, October 13-17, 1961), The Institute of Personality Assessment and Research (IPAR), University of California, Berkeley. The use of the term highly creative person in this chapter refers to individuals similar in characteristics to those described by the IPAR group.

2. Ann Roe, *The Making of a Scientist* (New York: Apollo Editions, Dodd, Mead and Co., 1955).

3. T. R. McConnell and Paul Heist, "The Diverse College Student Population," Nevitt Sanford (ed.), *The American College* (New York: John Wiley and Sons, 1962). Other publications are available at the Center for the Study of Higher Education, University of California, Berkeley, California.

4. Abraham Maslow, *Motivation and Personality* (New York: Harper & Brothers, 1954).

5. Henry Murray, *Explorations in Personality* (New York: Oxford University Press, 1938).

6. Robert W. White, *Lives in Progress* (New York: Holt, Rinehart and Winston, 1952), and Robert W. White (ed.), *The Study of Lives* (New York: Atherton Press, 1964).

7. Victor Goertzel and Mildred G. Goertzel, *Cradles of Eminence* (Boston: Little, Brown and Co., 1962).

8. Catherine Cox, *Genetic Studies of Genius: The Early Mental Traits of Three Hundred Geniuses*, Vol. 2 (Palo Alto: Stanford University Press, 1926).

9. Louis Terman and others, *Genetic Studies of Genius: Mental and Physical Traits of a Thousand Gifted*, Vol. I; *The Promise of Youth: Follow-up Studies of a Thousand Gifted Children*, Vol. III; *The Gifted Child Grows Up: Twenty-Five Years' Follow-up of a Superior Group*, Vol. IV; *The Gifted Group at Mid-Life: Thirty-Five Years' Follow-up of the Superior Child*, Vol. V (Palo Alto: Stanford University Press, 1925).

10. Bruno Bettelheim, "The Problem of Generations," *Daedalus*, Vol. 91, Winter, 1962, pp. 68-96.

A. Childhood of Creative and Eminent Persons

11. J. McVickers Hunt, *Intelligence and Experience* (New York: The Ronald Press Company, 1961).

12. Maslow, *op. cit*.

13. MacKinnon, *The Creative Person*, *op. cit*., p. V-18.

14. *Ibid*., p. V-20.

15. Frank Barron, *Creativity and Psychological Health, Origins of Personal Vitality and Creative Freedom* (Princeton: D. Van Nostrand Co., Inc., 1963).

16. Viktor Frankl, *From Death-Camp to Existentialism: a Psychiatrist's Path to a New Therapy* (Boston: Beacon Press, 1959).

17. Helen Keller, *The Story of My Life* (Original copyright, 1902, New York: Dell Publishing Co., Inc., 1961).

18. From a transcription of an interview with Abraham Maslow conducted by Elizabeth Drews, April 13, 1965.

19. Cox, *op. cit*., Goertzel and Goertzel, *op. cit*., and other biographers.

20. William James, *The Principles of Psychology* (Chicago: William Benton, Publisher, Encyclopedia Britannica, Inc., Great Books of the Western World, 1952), p. v.

21. White, *Lives in Progress*, *op. cit*.

22. Lucien Price, *Dialogues of Alfred North Whitehead* (Boston: Little, Brown and Company, 1954), p. 284.

23. MacKinnon, *op. cit*., p. V-17.

B. Adult Attributes of Creative and Eminent Persons

24. Maslow, *op. cit*., p. 232.

25. See Roe, *op. cit*., and Frank Barron, "The Psychology of Imagination," *The Scientific American*, Vol. 199, September, 1958, pp. 151-166. In reviewing these reports and others, it is quite clear that the individuals selected have been of superior intelligence and are able to think clearly and creatively. Many of those selected by Maslow as self-actualized have been described by other writers as highly intelligent or of genius level. Maslow reported that they typically prefer to concentrate intensely "on some

phenomenon or question" and do not care for "chatting or party-going." MacKinnon's staff, using an adjective check list, chose "intelligent" as very descriptive of the creative architects studied. A large number of these architects (88 per cent) also checked this adjective as self-descriptive.

26. W. Lange-Eichbaum, The Problem of Genius (New York: The Macmillan Company, 1932).

27. C. Lombroso, The Man of Genius (London: Walter Scott, 1891).

28. Barron, Psychology of Imagination, *op. cit*., p. 164.

29. Buckminster Fuller, Ideas and Integrities: A Spontaneous Autobiographical Disclosure (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963), p. 69.

30. Harry Levinson, "How Good Is Your Mental Health?" Think, March and April, 1965, pp. 24-28.

31. Norman Cousins, "What Matters About Schweitzer?" Saturday Review, Vol. 48, September 25, 1965, pp. 30-32.

32. John Stuart Mill, Utilitarianism, Liberty, and Representative Government (New York: Dutton, 1950), p. 17.

33. Richard Bucke, Cosmic Consciousness (New York: E. P. Dutton and Company, Inc., 1923).

34. Maslow, *op. cit*.

35. *Ibid*., pp. 214-215.

36. Bucke, *op. cit*.

37. Maslow, *op. cit*.

38. Abraham H. Maslow, "Psychological Data and Value Theory," in Maslow (ed.), New Knowledge in Human Values (New York: Harper & Brothers, 1959), p. 132.

III. RESEARCH RELATED TO THE DEVELOPMENT OF THE PRESENT STUDY, THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS

The present report is the final one in a series of three, all of which have been primarily concerned with the creative intellectual style in gifted adolescents. Our focus throughout is on the adolescents who read, think and imagine, and our effort is to discover the determinants that have given telling shape to these lives. The following descriptions should serve to introduce the three reports and indicate their relationship to one another.

Report One: THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS; Motivation to Learn: Attitudes, Interests and Values, "A Study of Non-Intellectual Factors in Superior (Average and Slow) High School Students."[1] This report described in detail the motivational patterns of almost one hundred adolescents* who chose for their self-description the creative intellectual type. We were particularly interested in exploring the intellectual, creative and ethical dimensions of their psychological growth. We also studied the characteristic differences between the creative intellectual and other types (studious and social leader) of gifted and non-gifted students. The belief that such growth would be inhibited and eventually stunted or warped if the young person's development toward identity did not find a responsive and evocative environment prompted our second study.

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*About twenty per cent of the total population of able students studied chose this category as a self-description, twenty per cent chose social leader and sixty per cent described themselves as studious.

Report Two: THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS; Being and Becoming: A Cosmic Approach to Counseling and Curriculum, "The Effectiveness of Audio-Visuals in Changing Aspirations of Intellectually Superior Students," Phase I.[2] This report states the theory behind, and describes the development of and results from, an experimental careers-social studies program for college-bound ninth graders. The focus of the project was originally on "career training," but as we studied the needs and potentialities of the gifted adolescent and the present status of careers, knowledge and the world, we realized that fourteen or fifteen was too young for making a career choice. And we also recognized that such a choice would not resolve the more basic problems with which each young person must come to terms: discovery and acceptance of himself and his place in the world. We felt that for the gifted adolescent an introduction to the intellectual disciplines and to the creative style of thought and living should replace an emphasis on careers. We redefined our project, submitted a revision of the original proposal, and developed and tested a new curriculum featuring ten style-of-life films and a text-anthology which presented the natural, technological, aesthetic and human worlds.

Report Three: THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS; Process and Product: A Reassessment of Students and Program, "The Effectiveness of Audio-Visuals in Changing Aspirations of Intellectually Superior Students," Phase II.[3] The present report has two foci--one an elaboration of the findings of the first report and the other an effort to test the strength and durability of the attitude changes reported in the second study. The former is a depth exploration of the psychological characteristics and development of the creative intellectual style through life histories based on student interviews. The modal histories present a variety of patterns of development among creative intellectuals as well as draw comparisons between the creative intellectual and other types of gifted students. The later focus is a reassessment of the effectiveness of the curriculum revision mentioned above in Report II. To do this, i.e., to re-evaluate the program, we again administered the tests which we had used to compare the experimental and control groups when we evaluated the formal study. The re-testing was done one year following the termination of the program.

A. A Descriptive Study of the Creative Intellectual Style in Gifted Adolescents

In our first report we had observed that studies of the gifted have frequently suffered from over-simplified criteria--a failure to recognize the complexity of the problem. Similarly, it was our contention in the second study that educational programs devised for able students frequently lack subtlety, complexity and sufficient challenge. We held that the current descriptions of the talented and much of the education which they are given do not seem to be valid for today's world. We will review in some detail the premises held, the hypotheses drawn and the results reported in these two studies as well as the modifications in direction which we have made as a result of this prior research and which continue to serve as guidelines in the present work.

The research upon which Report I was based was our first closely defined effort to add new dimensions to the understanding of these able young people, particularly their motivation to learn and their potential for psychological growth. We wanted to discover some of the qualities, beyond high intelligence and noteworthy academic achievement, that would help us identify those students most open to learning about the world and about themselves. In searching for an appropriate name for this group we decided to combine two terms and thus called them creative intellectuals. Creative, as we have used the word, relates to the more original and subjective, the aesthetic and intuitive forms of expression, while intellectual relates to the objective and the rational. It is our belief that today's world needs the talented individual who is highly developed in both realms and who has a social conscience as well. We also believe that each individual is warped in his growth, and perhaps stunted, if development of potential is not cultivated in these three primary modes: cognitive, affective and social.

In 1959, after five years of intensive study of the literature and after preliminary research efforts which involved several hundred gifted adolescents,* we developed three type-profile descriptions, creative intellectual, studious and social leader.** Following a pilot investigation, we did extensive testing of four hundred gifted high school students during the school year 1960-61. Through this study of non-intellectual factors (using observations, interviews, questionnaires, as well as attitude, personality and value scales), we found that students who identified themselves as creative intellectuals were markedly different from other able adolescents, i.e., those who by self-definitions revealed themselves to be either studious or social leader in their orientation toward school and life in general. The motivational emphasis of each type might be summarized as follows:

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*In 1954 we began to document our observations of the gifted child and we had our first critical thinking seminars in the junior high schools in Lansing, Michigan.

**Although we used these three types as modal descriptions, we were fully aware that they represented approximations and over-simplifications. Data on these young people, beyond the usual achievement and ability scores, provided ample evidence that they are vastly different from each other. Interests, depth and strength of responses and styles of thinking, all show that this gifted group is variable to the widest range of extremes. Bright young people not only have more talents than others but they present us with more unusual combinations of talents and styles. The boy scientist is sometimes a poet as well, and the May Queen may take computer programming on the side. There are limitless contraditions and inconsistencies. (For a more complete statement see "The Four Faces of Able Adolescents.")[4]

Type Profile	Kind of Achievement or Motivational Emphasis
Creative Intellectual	Drive to deal with intellectual and philosophical matters, to be both contemplative and independent. Oriented toward scholarly, theoretical, aesthetic, complex, and original approaches.
Studious	Drive to perform, in outstanding manner, in the areas defined by parents and teachers as "school learning." Strong desire to get high marks and to measure up to the expectations of those in authority.
Social Leader	Drive to acquire power and money, a need for social acceptance by peers and a desire to be popular and to dominate and to engage in entrepreneural activity. Strong interest in creature comforts.

It can be seen from these summary statements that the group of young people most unlike the creative intellectuals in their orientation to learning were those who identified themselves as social leaders. Test results indicated that this latter group had a relative lack of interest in ideas, especially those of a philosophical, theoretical and aesthetic nature, and were significantly more dogmatic and rigid than the creative students. In addition, results of a problem solving test indicated that the mean critical thinking score for the creative intellectuals was significantly higher than for the social leaders. However, those superior students who chose studious as a self-description were also significantly less interested in intellectual matters and less creatively inclined than were the creative intellectuals. The studious young person is not so apt to lose himself in contemplation, to want to deal with complexity, nor to prefer new and imaginative ways of thinking. In contrast to the other two types we studied, those who chose the self description of creative intellectual showed themselves on a variety of measures to be idea-oriented, independent and individualistic in thinking style, to have a self-sustained interest in learning and to be tolerant of and concerned for their fellow human beings. In studying the scales and specific items that seemed to characterize most clearly these more creative adolescents, it was apparent that there was a surprising congruence in attitudes, interests and values between them and highly creative adults. Beyond this, there were indications that a number of adolescents showed the qualities of social concern apparent in self-actualizing adults, and a few appeared to have the contemplative frame of mind of the philosopher-generalist.[5]

Some of the varied interests which creative intellectuals chose as important to them, and which seem relevant to an appreciation and understanding of, and ability to cope with the many-faceted modern world--emerging knowledge and the new nature of work--are worthy of mention here. Selected items from the Omnibus Personality Inventory (one of the instruments used in the study) which distinguished* the creative intellectuals from other able adolescents studied, are listed below:

The Aesthetic Orientation: Expression and Appreciation

I enjoy listening to poetry.

I like to read serious, philosophical poetry.

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*Choices by creative intellectuals, studious and social leaders (on separate items of the OPI) were tested for differences by the chi square. Each item is in a positive form (some have been converted from negative terms) and all reported were chosen significantly more often by creative intellectuals than by the studious and social leaders.

When I go to a strange city I visit museums.

I enjoy spending leisure time writing poetry, plays, stories, essays.

I leave the radio tuned to a symphony concert rather than to a program of popular music.

I like to listen to primitive music.

I enjoy hearing a great singer in opera.

I have spent a lot of time listening to serious music.

As a youngster, I developed a strong interest in intellectual and aesthetic matters.

I tend to make friends who are rather sensitive and artistic.

I like to read about artistic and literary achievements.

The Contemplative Mind: Critical and Abstract Thought

I enjoy reading essays on serious or philosophical subjects.

I like to discuss philosophical problems.

I have found myself frequently, when alone, pondering such abstract problems as free will, evil, etc.

I enjoy solving problems of the kind found in geometry, logic, philosophy.

I prefer a long, rather involved problem to several shorter ones.

I would like to enter a profession which requires much original thinking.

I like assignments requiring original research work.

I have a great desire to learn new things.

I would enjoy writing a paper explaining a theory and presenting arguments for or against it.

I like assignments which require me to draw my own conclusions from some data or body of facts.

I prefer not to have a principle or theory explained; I would rather try to understand it alone.

I would enjoy writing a paper on the possible long-term effects or outcomes of a significant research discovery.

I enjoy writing a critical discussion of a book or an article.

I am more interested in the critical consideration of ideas than in the practical application of them.

Ideas appeal to me more than facts.

I prefer the man of ideas to the practical man.

The Open Mind: Liberalism and Tolerance

Each person should interpret the Bible for himself.

When it comes to differences of opinion in religion, we should be careful to compromise with those who believe differently than we do.

Not all elements of Communism are worthless.

There is nothing wrong with the idea of intermarriage between races.

Our way of doing things in this nation would not necessarily be best for all the world.

I do not find it particularly difficult to give up ideas and opinions that I hold.

When you make important changes in direction you do not always make things worse.

If you start trying to change things, you may well find ways of improving them.

The Humane Sentiments: Optimism and Altruism

One must not resignedly accept a bleak world and an uncertain future.

In this uncertain world, we must not only provide for ourselves and our families, we must also attempt to help the world at large.

"Eat, drink, and be merry, for tomorrow you may die" does not make very good sense.

I find fault with anyone who tries only to grab all he can get in this world.

The Independent Stance: Resistance and Rebellion

I disagree with statements and ideas expressed by my classmates.

When someone talks up against certain groups or nationalities, I always speak up against such talk, even though it makes me unpopular.

It should not be a rule of thumb to avoid friendships with persons whose ideas make them unpopular.

I have always hated regulations.

It means a great deal to me to be different.

> Unquestioning obedience is not a virtue.
>
> A person need not adapt his ideas and his behavior to the group he happens to be with at the time.
>
> If young people get rebellious ideas, they should not feel they must get over them and settle down.

These creative intellectuals with the strong aesthetic orientation, the contemplative and open minds, the humane sentiments and the independent stances have, as we have seen, well developed views on learning and they also have definite ideas about what a school and a teacher should be. They indicated on the Student Interest Survey III (an informal instrument which we had used for a number of years and had adapted for the study of types) that they would like to spend more time discussing and learning about new ideas in school. They have described the ideal teacher as one who encourages creative research and individual projects, who is intellectually competent, and who will lead discussions in which philosophical, moral and ethical ideas are considered. In a similar vein, they have described the ideal school as one which has philosophy seminars, debate teams, science and literature clubs, and especially one which has a fine library and allows students the freedom to use it. These creative students have indicated that they wanted and expected to work (study) during non-scheduled hours (free time) and in their own idiosyncratic ways.[6] We might say that they read with a purpose and continually. They particularly liked to read at advanced levels: the classics, philosophy and religion, high-level science fiction, far-out poetry, social satire, plays, serious novels and outstanding news magazines.

From these test results (particularly the Omnibus Personality Inventory, the Allport-Vernon-Lindzey Study of Values, the Rokeach Dogmatism and Rigidity Scales and the ACE Critical Thinking Test, Form G), and from interviews, observations and recorded discussion sessions in the classroom, and informal conversations as well as from the questionnaires (SIS III) which asked about their attitudes toward school and teachers (and included questions about the student's present style of life and hoped-for future style) we have concluded that there were a number of personality characteristics which distinguished the creative intellectual from his equally able contemporaries. As a result of studying and clustering hundreds of items, scores, ratings, and statements by students and reviewing our recorded impressions we will attempt to express salient attitudes, interests and values of these creative intellectuals. From this we hope to give the reader a picture of the kind of young person this creative youth is. The statements used are either quoted directly or paraphrased from items which have been shown by our statistical studies to clearly discriminate the creative intellectuals from the social leaders and, for the most part, from the studious. They are offered as a summary description of the creative intellectual style in gifted adolescents.

Our findings show these young people to be unusually open and thus to have an exceptional awareness of reality within and without themselves. This openness is characterized by both a passive receptivity and an active seeking. They revel in "being," find life thrilling, and extol aesthetic awareness and sensitivity--enjoying the cadences of poetry, the counterpoint of music, the visual impact of graphic arts. They report not only reading poetry but listening to it and occasionally trying to write it. With many, serious music and even opera (a hard taste for Americans to develop) are budding interests. They particularly like to read.

In interviews and on questionnaires they indicate catholic reading tastes.* As we noted earlier, they read science and science-fiction, philosophy and religion. At times they sample Russian novels in translation and try their beginning French on French originals. They delve into the off-beat and the non-required--essays and poetry, ESP and magic, hypnotism and witchcraft--and they read while teachers teach (not a particularly endearing practice). Although they characteristically read at advanced levels, they will read anything, "even the telephone book although they don't like the plot" and when sent to the dictionary often literally "fall in," returning words and pages later. They report reading at all times "while waiting for things to start and waiting for things to stop." And when they read they look for deeper meanings and for complexities, "characterization, style and form" in literature appeals more than the 1-2-3 of action or the 3-2-1 of Space Age action. They want three dimensions and more--for them the two-dimensional, two-tone mock-up falsely represents a complex and largely uncharted world.

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*Some of these statements have been published previously in an article entitled "Profile of Creativity."[7]

This openness to possibilities makes for fuller awareness. They report liking "to consider many alternatives." Theirs are not the slogan mentalities--they see the fallacy in such over-simplifications as "there are only two sides to every issue: wrong and right (or yours and mine)." They reject the concept of the "one right" or the "clear cut" answer. Quite understandably this group gives social studies as a "best liked" subject more often than do other students.

They also enjoy free-ranging exploration in realms other than the arts, reading and social studies. As they say, they like "to fool around with new ideas even if they're useless" and "to learn new things." They love to solve problems--tic-tac-toe and chess in three dimensions; puzzles of all sorts--and to work with myth as well as symbol. Geometry and philosophy have strong appeals. And as they look ahead they want an occupation that allows, even requires, original thinking.

Paralleling this open, searching behavior and their ever-increasing range of awareness we see a growing trust in the reality of their own perceptions and an unwillingness to accept authority and authoritarian statements without critical examination. They report that they often "disagree with classmates and teachers" and are willing "to agree with people who are unpopular or who hold ideas that are unpopular" if these ideas make sense. They assert their independence in many ways, saying they want "to figure things out for themselves." They "do not want theory explained" or for "teachers to outline in detail," or to give prescriptions as to just when and in what style work must be performed.

Along with this trust in their own perceptions comes a strong liking for autonomy and the original and unique approach. They indicate that they "do not prefer known ways of solving problems or thinking." They prefer to "interpret the Bible" for themselves, even though they are often deeply religious. Such openness and willingness to explore the unknown and the unusual leads to a welter of uncertainties, ambiguities, and unsettled issues. In fact, they "do not want to know how a project will turn out" and they like incongruities and new art forms--the atonal in music, the non-objective in art. All this is taken in stride and they have confidence in their own ability (as well as mankind's aptitude) to develop new organizations and new patterns and, in Camus's terms, "to bring meaning to chaos."

Courage to face and explore the unknown is not only apparent when these students deal with ideas but also in relation to their contacts with people and the world at large. They report that they would like to try "a new school" and "visit new places." They are less tied to home and the family than any other group of teenagers and express a willingness to "leave home" even to the point of "running away" and "losing contact with parents" if necessary.

Today there is much talk of delayed adolescent rebellion but for these creatively inclined adolescents certain forms of intellectual and social rebellion come early. They have the courage to befriend--"even if it makes for unpopularity"--their odd and unaccepted classmates, e.g., boys who are sensitive and aesthetically inclined or outgroups (the underprivileged or minorities) that the ingroups isolate and/or attack. Their imagination and free-ranging sensitivity helps them to be empathic and see another's world "as if it were our own." They report understanding the reactions and feelings of people who lived in other times as well as those of other races and religions.

Often the adolescent who is creative and thoughtful may be more socially concerned than sociable. Observations of classroom behavior and study of typescripts of recorded class discussions showed that these students talked somewhat less than other equally able teenagers. However, despite a tendency toward being quiet and introverted, they thoroughly enjoy discussions in depth in small groups. They particularly like to contemplate man's future.

Their independence and love for contemplation may be the counterpart of a dislike for crowds and for "riding around." They rarely date early and at least the boys do not consider themselves "out of things" as a result. (The girls seem to feel this particular social pressure more keenly.) Although they are not uncouth and are generally clean, they often resist high polish in the social sense, preferring casual and individualistic dress to the "teenage uniform." As they state it, they "are unwilling to adapt their behavior and ideas to the demands of the group."

They believe in both love and logic in the very broadest senses of the words. Love is a concern for mankind and a belief in human potentialities--logic is a delight in organizing and ordering the complexities they bring into awareness. Thus they are occupied with things as they should be, contend that the "tried and true" may often be the "tried and found wanting," and feel that obedience to rules and customs is not necessarily a virtue. But above all, rather than being cynical and nihilistic they seem to have retained a sense of awe and wonder and hope. Many seem to agree with Millay as she reflected, "What a shining creature is man." Most feel that man is capable of creating a better world--not quickly or simply--but by developing his ability to think and to care, the potential within him.

These creatively inclined students rate high on aesthetic and theoretical scales while the social leaders* are higher on economic (materialistic) and political (power and status) values. We have called this latter group socially inclined because of their desire to hold office, to be popular, and to run with the right crowd--what is described by James Coleman as "The Adolescent Society."[8] They often prefer stadiums and parking lots to library books and space for study and they prefer teachers who "go to games" and "have school spirit" and who "joke and kid around--real smoothies." They are social to the point of conviviality. The gifted ones talk more than any other able students in the classroom and study less when out of it. However, their grades are usually adequate--since they have charm and know how to use it. They read little and when they do the choices are sports and boy-meets-girl themes. Most of all they want school work to be easy and non-demanding, not to stand in the way of having a good time.

They live in the present and show little inclination for lifetime learning. For them, the ideal assignment

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*Members of this group contend more often than is true of other gifted adolescents that they are average. Their scores on attitude, interest and value inventories would seem to confirm that at least their "outlook" is average. And since 60 per cent of the average students describe themselves as social leaders there is a certain reciprocity in this insight. We might say that the "adolescent society" has a social leader orientation.

"requires little study or thought once it is learned." They prefer the "tried and true" to the examined life, the "known" to the "unknown," the "old idea" to the "new," "facts" to "ideas," the "here and now" to the "far away and long ago" or the "emergent future." They do not want to think deeply or to plan ahead. Life on the surface* suits them well.

They value pleasure, money and power. Hedonism may take the form of conspicuous escapism into idle weeks in the sun or conspicuous consumption in the form of sports cars, swimming pools, and a multiplicity of cashmeres. They do not "blame anyone for trying to grab all he can in the world." Many admit to stealing when young and feel they must always be vigilant against the wiles of others--"if you get tricked you have just yourself to blame."

Living in the present, they have no desire to change the world or themselves. They seem to agree with both the optimist who says this is the best of all possible worlds and the pessimist who is afraid the optimist is right. As they say, "We can't solve our problems anyway" and "Change will probably make things worse." With no hope for improvement, "Only a fool would change his way of life." They feel that the "way in this nation is best for all" and do not seem squeamish about imposing it, even with force. Some have commented that they want the world to remain as it is and they want to run it. Many of the gifted students in this group are extremely popular and are already making headway in running the school.

The high-achieving studious want to learn but are proficient in academic rather than creative performance. They work hard (studying more hours per week than any other adolescent group) but tend to lack imagination and intellectual initiative. They seem all too willing to fit into the conventional academic norm of following instructions, taking examinations, and solving the problems set forth by teacher and textbook. Although Riesman has despaired of the vitality of the Protestant Ethic, this group seems to find "hard work a good thing" in and of itself. They are attuned to what parents and school (particularly school) expect. They tend to conform to what teachers demand or even to what teachers suggest. Since teachers' expectations, behavior, and attitudes are more often than not at odds with the dominant teen-age culture, this means that these students generally put their school work ahead of pleasure. They are not often school leaders, but they do their work and they turn it in on time. They may not be highly creative and original but many are highly productive in terms of such things as the number of problems completed or the number of words in a theme.

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*Such shallow lives may be adequate if they are not questioned and found wanting as in the Death of a Salesman.

Many of these high achievers want to know just how to do something and when it must be completed, but they are not so interested in knowing the "why" of facts as are some of the others. They want assignments to be explicit. They prefer to use textbooks and workbooks if given a choice, and they are the one group who do extra workbook exercises just for fun. In college they tend to prefer lectures to discussion groups--they sometimes describe discussion groups as a sharing of ignorance. They do not want the professor to ramble or to digress or to tell funny stories; they want him to lecture from an outline so they can put their own notes in an outline form and memorize them. Their feeling for logic is good; their sense of organization superb. They "want a place for everything and everything in its place."

However, this means that they often reject learning approaches that lack an apparent structure and avoid tasks that are oriented to means rather than ends. They sometimes feel that learning for learning's sake may interfere with getting ahead in the world. For them, education must be instrumental.

In our exploratory research on the students who described themselves as the studious type, we found that they typically said they read to be well-rounded and to help their grades. Among school-year interests, recreation rated lowest (both in relation to all other interests checked and compared to choices made by other groups), and school subjects proved very popular.

In their future lives, they want to be hard-working and conscientious, to help others, and to live by the rules. They like a schedule that is "set" and a life that is "ordered." They tend to be deadly serious and sometimes they take themselves that way. However, they are neat and attractive--the girls are often very pretty--and they make fine, upstanding citizens. They will be excellent employees. They may not scintillate at parties but they will shine on their monthly reports. They are punctual and not a little punctilious.

These students by their orientations--the creative and humanistic, the status-seeking and materialistic, and the traditional-instrumentalists--reveal themselves as yet only in terms of attitudes and fledgling behaviors. They are still uncertain as to how they will pattern their lives, what will be allowed, what will be available, what will be encouraged. If we believe that the open mind and the open society are superior to a closed mind and a materialistic, hierarchical society we should try to foster creative, flexible behavior. There are many students who waiver between the open, seeking approaches and the closed, non-intellectual behaviors. And even the most uncreative show inclinations toward liking freedom and spontaneity as they describe their ideal selves.

Facilitation of creative behavior comes from several sources. First, there must be acceptance and valuing. But undiluted tender, loving care is not enough--there must be exposures and challenge. Students cannot be aware of and perceive that to which they have not been exposed. And they will not respond to proffered experiences that are dull or unchallenging. They want freedom and flexibility (an "open system") and to assume some control over their own destinies, to bring reason to bear on their own lives and eventually on the lives of others. They believe in planned change as a result of self-examination and the study of society's needs. To do all this and to enjoy themselves, in the most profound sense of the word, they plead for opportunities to read at advanced levels and to have seminars where implications and meanings can be explored and the individual consciousness enlarged.

We will make a most moderate and data-based statement if we report that the creative intellectuals find that only rarely do teachers or schools fulfill these hopes. In fact, most of this group whom we have surveyed have been quite unenthusiastic about the conventional school programs--and some are exceedingly harsh in their judgments of the usual pedagogical procedures. They want and perhaps even expect a great deal more from their schooling than they feel they are getting; their plea is for an evocative and responsive environment. They seem to want to master everything, even themselves, and they dream of a utopian school--perhaps similar to the one described in Huxley's Island[9] (or they might even settle for the one described by Roger Ascham in the sixteenth century)--one which offers flexibility, freedom, challenge and stimulation. These qualities in a learning environment are seen also by psychologists and educators as essential for any effective educational program,* but they are not patterns typically found in the schools, as both Hughes and Flanders have shown.[10]

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*It should be noted also that the specifications for an ideal school given by the creative intellectuals were quite different from those given by the average students. Evidently the educational dreams of the average adolescent do not tend to agree with the experts' dreams which we have already noted were much like those of the creative-intellectual, able adolescent. It would seem that the average student is fairly well satisfied with the textbook-recitation routine and the emphasis on sports and

As the creative intellectuals have indicated, they seldom are assigned a teacher who discusses philosophy and encourages original research, and they see the schools as offering little flexibility. We must conclude in the normal course of events that the creative style in youth is not apt to be matched by creative environments. This means that certain essential links in the ecology of these young human beings are missing and that unless these are supplied creative development may be limited. Further, the more highly creative a student is and the more eager he is to learn on his own, the less apt he is to find a school environment that will fit--and, conversely, the more apt he is to find his school experience a liability rather than an asset.

B. An Experimental Program Designed to Foster the Creative Intellectual Style

It was the thesis of this research that a carefully planned school program which makes use of challenging materials and allows for individualized approaches could correct the educational deprivation which the more creative students report. And it might also stimulate psychological openness and more interest in learning in their counterparts who are intellectually able, have creative potential, but have not developed a creative style.

As we developed the new program our efforts were concentrated on bringing students to a dynamic way of experiencing existence which, as May has said, refers to "coming into being, becoming."[11] In a very real and intensely

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activities. If he has formulated dreams of the utopian school it would seem that they coincide remarkably with existing educational programs. It may be that this is the group who as adults find the open system a disturbing one and thus have the problems Hoffer delineates in the Ordeal of Change (New York: Harper and Row, 1963) and Fromm has described in Escape from Freedom (New York: Farrar and Rinehart, Inc., 1941).

practical way, there is only one ultimate "career," that of self-actualization in the Maslow sense.[12] To foster this point of view we had to help young people accept that a "search for meaning" should be continual, with no comfortable termination-point of thought accepted as an adequate goal.

Our aim, then, was to develop a program which would help academically talented adolescents assume a greater measure of responsibility for their own education and become aware that education is integral and continuous with all of life rather than bound to textbooks, class periods and school attendance. In other words, we wanted to help students re-define education. This meant that they must learn to employ and value a wide range of resources, materials and learning settings. We continued to study the attitudes, interests and values which we had begun to investigate earlier and have summarized above. We not only felt that these are central to the creative intellectual style and self-actualization but are also best fostered by new approaches to learning. These new approaches demand new methods (e.g., discovery methods replaced memorization and recitation) and new content (the reading materials featured primary sources at adult levels and the films portrayed creative adults who discussed their life patterns and philosophies). Broadly speaking, the effort was to increase motivation to learn; resistance to conformity pressures; openness to psychological growth, to new experiences and to humanitarian-altruistic attitudes; and to reduce prejudice, dogmatism and rigidity. In addition to attempts to change attitudes, we made an effort to increase critical thinking skills. And finally, emphasis was placed on the self-actualization needs and potentialities of the girls as well as the boys.

1. The Experimental Program

More specifically, the new content and materials were documentary-biographical films which we produced and a textbook with an unusual emphasis and format which we developed. There were ten films in the Being and Becoming Film Series,* and eight of these dealt with the life styles and value systems of creative and socially concerned adult prototypes. The film models, four men and four women,** were chosen for their qualities of original thought and personal integrity. The introductory film deals with the concepts of being and becoming, presents four creative college students as models, and discusses the ideas behind the films and the text. The final film was devoted to a discussion of the creative process and of social responsibility by the eight models.

The film series was preceded by a flexible anthology, the Four Worlds Textbook,*** which introduced the students not only to a wide range of heroes, both contemporary and out of the past, but also to significant ideas and crucial issues. This was an open-ended book which presented the natural, aesthetic, technological and human worlds to the students and invited them to examine sources and ideas critically, to make revisions and deletions, and to add new materials. In essence, they were to develop their own cosmologies.

Both the text and the films were used in a context of class discussion.* As films were shown they were accompanied by mimeographed typescripts which provided a valid base for student commentary. Students were encouraged to present their viewpoints orally, a new experience for many, and to engage in confrontations and dialogues with their peers and teachers--using as subject matter the issues raised in the materials or by the students themselves. As these developed, verbal interchange ranged from the concrete and personal to the abstract and philosophical.

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*Mr. Douglas Knowlton was the able and imaginative film-maker. Interviews and scripts were the task of the project director. Arlis Thornblade Stewart assisted.

**Film models:
Eugene Petersen, historian
Mary Coleman, judge
Robert von Neumann, artist
Barbara Radmore, radiologist
Kay Britten, singer
Loren Eiseley, natural scientist
Anne Roe, social scientist
Harold Taylor, philosopher

***Many teachers and counselors as well as students contributed to this textbook. Particular thanks is extended to: William Helder, Jack Riley, Arlis Thornblade Stewart, Robert Trezise, Jane Ward and Charlotte Whitney.

It was hoped that students would abstract and generalize and--after careful and critical thought--internalize those attitudes which they encountered that had appeal for them. Although part of the effort of this research was to test role model identification, it was not expected that this would be the sole vehicle of change. It was felt that experiences relating to independent associations and activities and free discussion of issues would contribute significantly to attitude change and thus to the effectiveness of the program.

2. Method and Results

The creative intellectual style was tested in this research by the following standardized instruments: Omnibus Personality Inventory, Allport-Vernon-Lindzey Study of Values, ACE Critical Thinking Test, Form G, and the Rokeah Dogmatism and Rigidity Scales. In our previous work we developed several informal instruments to supplement these formal measures. The following were used: Student Interest Survey Scales (incorporated into the Student Interest Survey V), the Reasons for Occupational Choice, the Student Profile Check and the Ability Self-Concept rating.

The feminine dimension embraced a special aspect of the creative intellectual style in that two instruments, Acceptance of Women Scale and Self-Actualization in Women, were concerned with self-realization in women. In terms of a more universal base we were also interested in a third instrument, the Humanitarian-Altruism Scale, which was developed while the course was under way and served to explore areas that had become a strong focus in the program.

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*A project summary film has been prepared which shows the development and use of materials and which features students in the program discussing major issues.

These values, i.e., social concern and the belief that girls should develop intellectually and creatively, seemed more important to us as the program developed. We found, as we observed the class discussions and noted reactions to the films, that considerable prejudice was expressed against girls and women who behaved in self-actualizing ways. This prejudice mainly was exhibited by boys who also expressed strong feelings against other values stereotypically associated with women. Among these was the valuing of humane ways of thinking and behaving and an appreciation of the aesthetic realm and the natural world. Boys* typically valued technological change-making and doing things--rather than taking a more contemplative and reverent view of life.

As a result of the program and the special emphasis given to the creative intellectual style and the feminine dimension, it was hypothesized that the experimental group would be higher than the control at post-testing in the following areas: originality, complexity, aestheticism, theoretical orientation, and thinking introversion (philosophical contemplation). It was also hypothesized that the experimentals would (at the end of the experiment) test higher in critical thinking skills and express fewer dogmatic and rigid attitudes. In addition, several hypotheses were drawn to indicate that we expected experimentals to show (at post-testing) more interest in creative intellectual present and future life styles; and others were drawn to show that in the secondary focus of this study, the feminine dimension, we expected more valuing of self-actualization in women and of humanitarian-altruistic behaviors.

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*A small group of boys who tested high on the Acceptance of Women Scale tested significantly higher on creativity scales than boys who tested low on this scale. Although the results of this sub-study are not reported here, we plan to inquire further into the attitudes of boys and men who show high creative potential, are unusually open-minded and value women as human beings in the most elevated definition of the term. In this context we use the term reverent as Schweitzer used it, i.e., reverence for life.

Altogether we administered eleven post-tests and reported results for the control and experimental groups by totals, girls and boys. For the totals we discovered that our hypotheses were borne out, that is, the experimental students scored significantly higher than the controls on the _Originality_, _Thinking Introversion_ and _Theoretical Orientation_ scales of the _Omnibus Personality Inventory_ and higher (but not significantly so) on the _Estheticism_ and _Complexity_ scales. We found that the experimental group scored higher on the _Theoretical_ scale of the Allport-Vernon-Lindzey _Study of Values_, but not on the _Aesthetic_ scale of the same test. They also scored significantly higher on the ACE _Critical Thinking Test, Form G_, the _Creative Intellectual_ scale, _Student Interest Survey V_, and checked more creative intellectual reasons for choice of a future occupation on the _Reasons for Occupational Choice_. No totals were computed for the _Acceptance of Women Scale_, _Self-Actualization in Women_ instrument or the _Humanitarian-Altruism Scale_ since it seemed inappropriate to combine scores which held very different meanings for boys and girls.

The experimental girls followed a pattern similar to but not identical with the pattern followed by the total group. They scored significantly higher than the control group on the _Estheticism_, _Theoretical Orientation_ and _Thinking Introversion_ scales of the _Omnibus Personality Inventory_, higher on the _Aesthetic_ scale of the A-V-L _Study of Values_, showed more critical thinking aptitude on the ACE _Critical Thinking Test, Form G_, scored higher on the _Creative Intellectual_ scale, _Student Interest Survey V_ and checked more creative intellectual reasons for choice of a future occupation on the *Reasons for Occupational Choice*. The experimental girls also scored significantly higher on the *Acceptance of Women Scale* and on both the Ideal and Real choices of the *Self-Actualization in Women* instrument than the control girls, and they also scored higher on the *Humanitarian-Altruism Scale*.

Finally, the experimental boys tested significantly higher than controls on post-test results on the *Theoretical Orientation* scale of the Allport-Vernon-Lindzey *Study of Values*, the ACE *Critical Thinking Test, Form G*, the *Creative Intellectual* scale, *Student Interest Survey V*, made more creative intellectual choices on the *Student Profile Check* and on the *Self-Actualization in Women* instrument, more of them chose the creative intellectual woman as the wife they would probably marry (Real choice).

3. Conclusions and Implications

At no point, as we designed and carried through this experimental program, have we been tempted to change our educational objectives in fundamental ways. We still believe it is our task to teach young people to think and to care. This must be our aim and it is an aim entirely compatible with the possibilities inherent in today's society and the potentialities in today's youth. Our experience has intensified our belief that programs not only can be but must be designed to promote self-actualization. We have accepted as our preferred definition for the self-actualized adult Maslow's statement that these are the individuals who are creative in all of the generally acknowledged ways, as well as being, " . . . altruistic, dedicated, self-transcending, and social."[13] In other words, we hold that the proper study of youth is the world and themselves. They must discover the breadth and complexity of this world, develop a sensitivity to the human condition, and strive for a sense of self--to be, to know, and to get themselves in hand. This means that they must find a philosophy to live by as well as a life style that is attractive. In choosing and fashioning their philosophy and life style, young people must aim to surpass their present selves.

As we observed above, these views were in no way diminished as we continued our work. In fact, our convictions grew--as we gained insights into the lives of the adult film models, read about the extraordinary human beings featured in the text-anthology, and studied the reactions of teachers and young people to the values and life patterns exemplified--that education must promote human well being. This concept of well being must apply to gifted adolescents as well as to the larger society. Students must understand their own needs for the fulfillment of potential--to live a life of reason and creative awareness. And they must, as they learn to understand themselves, also come to understand others and stop being strangers with one another. As Ashley Montague asserts: "The critical social and educational problem of today is one of learning how shared relationships may be fostered and freedom of inquiry accelerated."[14]

As we studied the typical classroom, the usual text-recitation paradigm, and the common curriculum content; and as we observed the reactions of able young people to this educational process, we came to see that much of what we do socializes and controls but does not free. Thus a socialized, controlled and conforming individual often emerges from our schools and he is not apt also to be autonomous. We came to the view that there is a great gap between our educational myth--that we educate for individuality and personal integrity--and the reality of our school programs. Perhaps an education that fosters individual fulfillment and still remains sensitive to ethical issues is impossible but we felt that we must at least make an effort to realize our aims and must, despite our ineptness, try to educate for competence and compassion.

C. A New Focus for Education[15]

Both this experimental program and our other research[16] led us to accept these aims of education and convinced us that educational innovations are particularly needed in the social studies-humanities area. As we mentioned before, we realized that our own efforts to develop a new program would be exploratory and tentative, but we also came to believe that there was no alternative but to make the effort. Our conclusions have been that there is a vital need to demonstrate and help young people find more democratic and humane ways of living. We suspect that many of the present patterns of education do not do this. Education which conditions children to repeat textbook formulas and to unquestionably accept teacher dictum, which concentrates on the problems of the past and teaching children as if they were all alike, obviously, does not prepare young people to become self-actualizing. And it does not prepare them to live in today's society. The changes we suggest will entail rethinking every aspect of the educational program and will involve helping both the teachers and young people understand what this different kind of education is all about.

We felt that both teachers and students would come to care more about education if they were directly involved in the program change themselves (they helped, in our program, to make the flexible textbook and served as consultants to the filmmaker). It is our conviction that changes can be made which will increase motivation to learn and cultivate an openness of mind and heart--both necessary for self-actualization. Such a reconstruction of education will be most apt to occur:

(1) if education is redefined and students come to accept its new meaning,

(2) if new skills and ways of learning are taught, and,

(3) if curriculum content is revised.

These approaches are held to be fundamental if the aim of education is to teach young people to think critically and creatively about themselves and their society. Each point is discussed more fully in the remainder of the chapter.

1. Education Redefined

The considerations discussed in the preceding pages have led us to strongly recommend an education which has a new emphasis--self-actualization. This will not be an easy task for it will demand, to a considerable extent, a redefinition of education. If students are to develop their intellectual and creative potential[17] they must have a vision of what they might become, they must learn to live examined lives and begin to search for a life philosophy. And each will have to become responsible for his own education. Students who have had opportunities to search for a life philosophy and to take responsibility for their educations have responded favorably.* One who had spent a half year in such a program remarked, "It has helped me to understand the problems of the world and where I fit in to help solve them. It seems as though my eyes have been opened."

We believe that education must be redefined for many students, and sometimes for their teachers as well, if the students are to assume responsibility for their own education. Students often feel they are "being educated" by outer forces, that an education is something that happens to a person but they do not understand that they can make it happen or how they can make it happen. We must ask several questions:

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*All students' comments are verbatim statements made by college-bound ninth graders involved in our new program (five classes a week for a semester) planned to foster self-discovery, independent learning and--of course--self-actualization.

How can we help students to think creatively about their lives?

How can we help students to become more fully aware of themselves and how they learn and how they feel?

How can we help students to become more independent in their efforts to learn?

How can we help students to work toward developing a unifying philosophy of education and life?

The task of attempting to answer these questions and solve these problems is of central importance to each student and to all teachers but the answers do not come easily. We must enlarge our understandings of self psychology and the construct of self-actualization; we must try to understand the learning process better than is now the case; we must do more than give lip service to teaching students to think; and we must prepare new material--attractive in format and significant in content--for these tasks. The learning environment must become more responsive and evocative than it has been in the past and teachers must become more skilled as counselors and consultants.

If we are serious about producing changes in this direction, one of the most effective means will be to help the student understand and accept the objective of self-actualization. He must realize that the point of his education is personal growth--intellectual, emotional and moral. To the extent that this becomes a key motivating force in his life, he will be apt to move in that direction and, because he rehearses the ideas frequently, his learning will be more lasting and meaningful. Students seem to come to this viewpoint readily. As one said:

> The people in the [Being and Becoming] films are still learning, aren't they? I used to think that when you memorized your schoolwork, that was all you had to know, but these people are still trying to learn something new all the time.

We are suggesting that the concept of self-actualization become a clear and conscious one for the students and for teachers as well. The very act of conceptualizing the idea will lead to a more complete and a higher level of understanding.

In accepting such a direction of development as being possible, we agree with Julian Huxley: "The next decisive step in evolution will . . . be the fuller development of self-consciousness."[18] This parallels the more optimistic view of man taken by the "third force" psychologists.* For example, Allport, in discussing the forward thrust of "becoming," sees man not only as a "self-conscious" but also as a rational creature who creates his own style and his own future.[19] The consensus is that, given a healthy organism and a responsive environment, the direction of growth and the choice made will probably be good.

The student who is seeking an identity must clearly understand that this process cannot be one of simply confirming himself as he is; rather, the process must be one of attempting to become all that he can be. In addition, students will need to understand that education continues throughout life and is integral with all aspects of living. For this to happen, the student should not only be conscious of the need to grow but he also must begin to reach out into the surrounding world and begin to discover various life styles. Gradually, he will come to unite these new ideas with his existing images. Class discussions, led by an empathic, warm and self-revealing teacher, will help this to happen.[20] There seems little doubt that students will take such self revelations seriously and become deeply involved. After many discussions centering on life philosophy, one student commented:

> Class discussions helped me to understand that people are not machines. They are really living

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*Among the "third force" psychologists are G. Allport, C. Bühler, E. Fromm, K. Goldstein, R. May, A. Maslow, G. Murphy, C. Rogers and H. Sullivan.

> creatures with many variable feelings and interests. Before this class was open to me, I always thought a person was just the kid next door or my teacher, but now I know more about the deep person behind this face.

If we want to help a student become responsible for his own education, we must make it clear that we consider this to be his task and are willing to make it possible. We must define learning in those terms, telling students they can, of their own volition, change, improve and become educated. After a semester of reviewing world issues and contemplating life styles, another student observed:

> The understanding of myself has increased greater than anything else. No other class has even considered the individual important. I think this class shed light on that for most of us.

Demonstrating--through models or films--how others come to understand themselves and take responsibility for their lives can be particularly helpful. Of course, there must be leeway (saying, in effect, there are many ways--choose one that suits you), and time (hours and days, not minutes), as well as materials that have built-in flexibility and by their very nature ask for individual adaptations and innovations. None of this can be forced, of course. There must be only the suggestions, the models, and the opportunities for self-direction. Sometimes even the shy will respond as did one very quiet boy who concluded, "What better way is there for you to look at yourself than by bringing yourself out from hiding?"

Forcing students to be independent is neither appropriate nor effective (although mother robins do push their young out of the nest). We feel it is best, instead, to suggest and if the student is fearful and unready, he can, in effect, say, "I will not be responsible. I will learn only what I am told." However, students who are intellectually able and psychologically healthy take to responsibility and independence readily. One boy remarked:

> This course has stimulated me into finding hundreds of things I never realized or even had the slightest

> inkling of. I never knew that deep philosophical theories could be so interesting and captivating. Many things like, EDUCATION; God and Evolution; HUMANITY.

Such students have not been reduced to passive dependency. Our surveys have repeatedly shown that superior students generally choose as an ideal self an image or description which approaches self-actualization, although they may feel in reality that they fall short of the mark.

In its most general meaning, to be educated is to learn to live. Although students may only vaguely understand learning as a lifetime task, all students can come to see their education as a full-time endeavor which, in the broadest sense, consumes every waking hour. Students must see that there are many intellectual and creative pursuits (non-symbolic as well as symbolic, humanistic as well as scientific) in which they might engage and which will make a difference both to the student and to the world in which he or she lives. One girl commented after reading for several weeks in the Four Worlds Textbook:

> I have been reading so many new things, about different aspects of the world and all the problems that exist. Even though I'm a little thing in a great world, I can contribute by just trying.

Education and knowledge should become open systems with the student continually learning to deal with more of himself and more of reality. As Margaret Mead says, this can result in " . . . an enlargement of the stage on which every individual acts."[21] To participate fully in education, students must learn the art of adequate experiencing and be given training in perceiving and imagining. School and learning can be an illuminating and entertaining experience or a dull and pedantic one. To augment awareness and social participation we must, as Ojemann has shown, help each student not only take responsibility for his own development but comprehend the dynamics of his behavior as well.[22] Such understandings will counteract present-day tendencies to abstract cognition and learning from their living context. Learning must never be seen--by the student, the teacher or the researcher--as independent from the learner or from the total environment in which he lives.

2. New Skills and New Approaches to Learning

If we accept as a thesis that democratic and mutually supportive ways of living together are good ways, we must realize that we endorse hope. As Gardner says, " . . . democracy demands a certain optimism concerning mankind."[23] This optimism is even more apparent if we endorse self-actualization as an appropriate and necessary educational goal. The concept of helping young people to become self-conscious, rational beings who create their own style and their own future is utopian in the most modern and idealistic interpretation of the word. This view sees youth as "effective," not merely reactive, as responding creatively, not simply coping, and as planning rather than just managing.

Thus creative problem solving, as Dewey has pointed out, is not only the common denominator of the scientific method but also the method of political democracy.[24] However, a sense of personal effectiveness and the development of talent in creative and critical thinking skills usually do not occur spontaneously or by accident. By one means or another, and to the extent that the talent is mastered, people learn to think. Our thesis is that young people can be taught to think but we are forced to agree with some of the children who comment, "People say thinking is a good thing--especially for children. But they don't tell us how and they don't give us anything very important to think about."

Fortunately a few research workers have taken these directives seriously. Bruner has explored problem solving--particularly discovery methods--in the *Process of Education*[25] and, more recently, has looked at the more subjective aspects of the process in *On Knowing: Essays for the Left Hand*.[26]

Gallagher has reviewed current research in what is called "productive thought"[27] and both he and Guilford[28] have studied certain aspects of creative thinking in children and adolescents. Torrance also has explored this area and developed and tried out imaginative ways for teaching school children to think creatively.[29] Taba has done a long-term and carefully thought-through study concerned with teaching children to think in the social studies area.[30] Suchman has developed ingenious approaches to group and individual problem solving called "inquiry process"[31] and the science and mathematics research and curriculum teams have made great progress in re-writing curriculum materials in these areas and incorporating problem solving and scientific thinking into programs of study.[32]

Learning to think and to learn are crucial to the process of self-discovery. A sense of identity and "full humanity" can only come when students have learned to collect a wide range of information, to evaluate it carefully and to make wise decisions. As Tillich has noted, a man is never more human than at the moment of decision.[33] However, it is our contention that many students (including many who have high intellectual potential) will not maintain an eagerness to learn and a willingness to think if there is no opportunity for them to practice thinking and problem solving in school. Without opportunities to make discoveries and choices in terms of their own thoughts and wishes--to fulfill their humanity through moments of decision--students will find it difficult to discover themselves. In other words, the exercise of choice is an affirmation of selfhood.

Talent in managing reality without (the outer world) and within (the inner world) will increase as students learn to take responsibility for their education. They will improve both because they practice these skills and because each act of independent discovery (about themselves and the world) will give them a sense of power. Engagement in thinking (rather than merely memorizing) will also allow students, as Dewey suggested, to internalize their learnings. Such processes--discovering on one's own and putting ideas into one's own words--will also enhance the storage and retrieval of ideas.

In building a program that will foster critical thinking, ample opportunity should be given for students to "try out" ideas, add new insights, and make their own decisions. We also felt it was necessary that each student understand that such independent learning and problem solving is important, and also that he understand why it is important. Some of the major propositions to be kept in mind and communicated to the students follow:

Students must choose areas of learning or problems which appeal to them. They will learn best if there is a "thorn in the flesh" (Northrup's term for materials which rankle and then instigate thought) and if they really want to know something. If vital and controversial issues and a wide range of possibilities and alternatives are presented, students are apt to find problems that appeal or they may, perhaps, fashion a new problem.

When introduced to new possibilities and given the opportunity to make choices, one student said:

> There were many things I found interesting I probably never would have discovered on my own. Art and music were much more interesting and alive than I thought they would be. I learned I got more out of the Saturday Review than Motor Trend.

Students must learn how to think flexibly and creatively. Idea-tracking and brain-storming in free-form group discussions can help each student go far beyond the limits of his usual perceptions and understandings. Oral expression of thoughts may also lead to "Inner Dialogue" which Jung considered an imperative for self-discovery. We believe that the classroom should provide many opportunities for such oral discourse and dialogue in a non-judgmental atmosphere and in open unstructured situations. What we have termed "the conversational dialectic" could provide opportunities for exchange and paraphrase that would directly enrich the student's symbolic skills. Other kinds of discovery can come from the openness discussed earlier (see "Education Redefined") which flexible materials and an accepting teacher will encourage. Beyond choosing an area for study and finding how best to express himself in talking with others, the student should be taught how to search in wide-ranging ways.

If they are to solve problems, students must learn to generalize from data and to group ideas in meaningful clusters. If the student learns to search he will also begin to ask questions. If the classroom climate is accepting and the teacher and materials evocative, students should produce a large number of viable hypotheses and theories. Teachers can, by example, show how this is done. We feel that by presenting important issues as well as an array of solutions and certain unifying principles, students can be helped to choose, to try out, and to form more intelligent hypotheses. It is important to remember that in teaching critical thinking there should be a warm and accepting classroom climate. Students will need to feel accepted as well as challenged. Further, speculation, search and discovery will probably not occur if the teacher insists that there is only one way to do a problem or one right answer and will not tolerate the educated guess.

One student recalled this incident from his experience in the eighth grade:

> Last year in a science course, I couldn't work out one of the problems in the way the teacher showed us. I thought a lot about it, and got the answer in an entirely different way, but the teacher wouldn't accept it. She said it

> wasn't right because I hadn't done it the way the book said.

Students must be taught to form ideas and images of what might be; they must generate models and theories to explain phenomena. This will mean that teachers will use models, theories and generalizations and that they must characteristically "lift" thinking by showing students how to draw relationships, parallels and analogies between seemingly unrelated events. Such common components are essential aspects of theory building. Teachers must be able to help students use techniques that bring together (in probable relationships) an array of diverse phenomena. Thus students can come to see that fragments (what appears to be unrelated knowledge) can be related, unified and explained--and often in a number of alternative ways. Such efforts on the part of the teacher do not go unnoticed by the students. One student commented:

> This is my first experience with a teacher who helps us when we want to deal with "important" issues, like "Whither Mankind?" I guess a teacher needs to be pretty special to be interested in what we think when we're in ninth grade and to help us think problems through.

Students must learn ways to test hypotheses and to make critical judgments. An attitude of optimistic skepticism is basic to problem solving--the student must feel that answers are available but that each is to be tested against logic and information. If materials on key issues which students read contain several alternatives and these are vividly and cogently stated, students, by comparing possibilities, may come to recognize shallow reasoning and *non sequitur* conclusions. In an open forum with intelligent teacher leadership, they may recognize distorted and incompatible statements and pointless questions. As one student said, "Before, I often reached a conclusion by emotion rather than reasoning. But now it's the other way around." We believe that this will happen if we present examples of adults who are thinking critically. We also believe teachers can make a contribution by setting the stage for discussions and by helping each one understand that other students could disagree with his ideas while respecting him as an individual.

Students must finally realize that at some point they will have to make a decision and take a stand. They must see that making choices is a skill which goes beyond tracing, relating and evaluating, to the realization that the attitudes and actions of each individual are vital forces in the lives of others. It is at this point that the student may learn the meaning of responsibility. We feel that students can best learn to take a stand and make a responsible choice by coming to know that adults who are influential in our society, teachers included, think things through, make decisions carefully and have ethical concerns about the consequences of their decisions. They will, of course, find that many adults and many of their student friends do not seem to make either ethical or logical decisions, that they do not characteristically examine the assumptions they hold or do not regularly check for bias and prejudice before they make a statement. Free discussion can make a difference particularly when there are two-way conversations and when students and teachers listen to one another. The student's conscience becomes enlightened and stabilized through confrontation (discussion). One student summarized her feelings as follows:

> When a teacher talks with you, not at you, he really seems to care about you and not just that you memorize his lessons. When he really listens to what you say, it makes you feel like you are accomplishing something. You feel like a real person.

There are, of course, many ways in which a student can develop intellectually, search for truth and solve problems. Many definitions and specified steps have been given for such activities as scientific thinking, creative thinking and critical thinking. No effort to generalize can cover all possibilities; neither can we even predict the order in which any given individual will proceed. A teacher will often understand how a given student thinks if there are frequent class discussions which meet some of the requirements of critical and creative thinking. These may be structured in the manner similar to the "20 questions" approach, which Suchman used in inquiry training,[34] the Socratic method, which Oliver used in teaching social studies;[35] or quite unstructured as in the free discussions in our experimental program and which we have called the "conversational dialectic."[36] In all of these approaches, the important thing to remember is that action and personal involvement on the part of the student contribute to learning and change.[37]

3. New Content and Materials

If we take our stated purpose seriously, i.e., if we want students to become self-actualized--to experience themselves as worthwhile and unique individuals who at the same time have a sense of shared purposes with others--we must change the materials in the curriculum. Gardner puts it this way:

> If we believe what we profess concerning the worth of the individual, then the idea of individual fulfillment within a framework of moral purpose must become our deepest concern, our national preoccupation, our passion, our obsession.[38]

We know that young people are, to a very large extent, what they experience. If we want them to develop a sense of integrity and a social conscience they should be exposed to individuals who exemplify these qualities and to materials that present important theories or philosophies of a humane and social nature. A student who had been reading widely on world issues and in biographies commented, "Albert Schweitzer's reverence for life made the biggest impression on me. He always loved his fellow man and helped him whenever he could." This may serve, in some measure, to balance the daily diet of scandal, sex and crime which mass media offer. Special materials will have to be prepared since, as Robert White says,

> [there are] scarcely any systematic case records of great fortitude, rare heroism, unusual contribution to the arts or special success with grasping and solving important social issues. The natural growth of personality and the higher flights of human achievement have been given almost no representation in man's current ideas of himself.[39]

Young people will not be able to redefine education and learn new skills and approaches unless the content and the means by which this content is presented are changed in dramatic ways. For a decade the "curriculum revolution" has been underway but it is only now beginning to touch social studies and the humanities. With appropriate materials in these areas, students will not only develop an adequate grasp of the intellectual disciplines, but they will be more apt to develop an adequate conception of knowledge and of self. They will learn the range and possibilities of human excellence if they meet "significant others" and if they are given an opportunity to "stand on the shoulders of giants." In this way, creative expansion may become their modal behavior style, and they may avoid typical student behavior--where answers are given too quickly, knowledge is treated too cursorily, and even careers are chosen hastily and carelessly. Thus, behavior can become self-transcending rather than self-confirming.

We must examine our offerings to students and attempt to fill in the gaps and to supply materials that will be important aids to constructive growth. We can show how man shapes his environment, we can depict human beings with a sense of destiny rather than focusing, as White says psychology has done, " . . . mainly on man's irrationality and helplessness."[40] Materials that present such ideas and concepts can make a very great difference to a single student or to a group of young people. One student who felt he had changed commented,

> Harold Taylor, the philosopher, is the most interesting person. He broke my idea of a philosopher because he doesn't just think about something, he does something!

As Mumford has said, man is "the unfinished animal," he is influenced by what he sees and hears and reads,

> The final stage of his growth is not determined by his biological past; it rests with himself and is partly determined by his own plans for the future.[41]

The individuals whom students meet and the materials that students read should release them from the limitations of the classroom and should take them into the artist's studio and the scientist's laboratory and, more importantly, the young people should come to understand how these individuals think. One student reacted to the style-of-life film of a philosopher-artist:

> Robert von Neumann was an excellent example of the artist who really thinks about his work, likes it, and expresses the thought, beauties and actions of nature. He seemed very dedicated--his chosen field was a way of life and he loved it.

Students should also be introduced to kinds of reading, such as magazines of critical commentary and scientific journals, quite unlike "school type" materials.

Adolescents, and especially those who are intellectually superior, are able to think abstractly and reflectively, can deal with important topics and have a concern for what Erikson has called fidelity.[42] Teaching materials should be developed with these concepts in mind. Students are aware of the complexity of the modern world, and they know we are living in an era of accelerated change, but we have not given them a metalanguage or metaskills which will allow them to deal with the continuity of change.[43] Although we may not be able to provide all of the needed information, language and skills for dealing with the future, we can show students how others contemplate reorganization[44] or even "invent the future."[45]

For those who are concerned with the personal development of youth, who feel that our existing offerings are not providing adequate intellectual and moral sustenance and who are inclined to do something about the problem, communication research offers some direction. For example, investigations have shown that materials should be believable. In other words, respected sources such as the actual statements of esteemed individuals will carry greater impact than less vividly stated and less valued conclusions (e.g., from a secondary source such as a textbook.)* A student comment points up this observation:

> It seems to me that President Kennedy was talking directly to me when he said, "Ask not what your country can do for you: Ask what you can do for your country." That really inspires me to want to do something useful. I never considered before that one person could make a difference.

Beyond this it is well to keep in mind that students will be more apt to remember and think about ideas if they are given the symbols (words or labels) for doing this thinking. Thoughts, including attitudes such as motivation to learn or to find out, are symbolic acts which are rehearsed often and, if teaching materials are to be effective, should be tied to real acts and are therefore apt to produce behavior changes.[46] Such relevance, i.e., materials that strike students as being relevant to a world they know and understand, will be most apt to produce behavior changes and learning.

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*Students will need to be taught to evaluate sources carefully as was indicated in "New Skills and New Approaches to Learning." They can, for example, learn to respect research findings more than hearsay.

III. RESEARCH RELATED TO THE DEVELOPMENT OF THE PRESENT STUDY, THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS

1. Elizabeth Monroe Drews, THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS; Motivation to Learn: Attitudes, Interests, and Values, Report I in a series of three: Final Report of the Cooperative Research Program, E-2, U.S. Office of Education, "A Study of Non-Intellectual Factors in Superior, (Average, and Slow) High School Students" (East Lansing: College of Education, Michigan State University, 1964).

2. Elizabeth Monroe Drews, THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS; Being and Becoming: A Cosmic Approach to Counseling and Curriculum, Report II in a series of three: Final Report for the Media Branch, Title VII, National Defense Education Act, Contract No. 7-32-0410-140, U.S. Office of Education, "The Effectiveness of Audio-Visuals in Changing Aspirations of Intellectually Superior Students," Phase I. (East Lansing: College of Education, Michigan State University, 1965).

3. Elizabeth Monroe Drews, THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS; Process and Product: A Reassessment of Students and Program, Report III in a series of three: Final Report for the Media Branch, Title VII, National Defense Education Act, Contract No. 7-32-0410-222, U.S. Office of Education, "The Effectiveness of Audio-Visuals in Changing Aspirations of Intellectually Superior Students," Phase II. (East Lansing: College of Education, Michigan State University, 1965).

A. A Descriptive Study of the Creative Intellectual Style in Gifted Adolescents

4. Elizabeth Monroe Drews, "The Four Faces of Able Adolescents," Saturday Review, Vol. 46, January 19, 1963, pp. 68-71.

5. As Gardner points out, there are practical gains for the individual who is generally well educated. He believes that " . . . even in our own society there may be overproduction of educated talent in specific lines. Indeed, on many occasions in the future there will be an imbalance between the number of men trained for a given line of work and the number of jobs available. Attempts will be made to minimize this through accurate forecasts of manpower

needs, but experience with such forecasts has been discouraging. The alternative--and the wiser course--is to educate men and women who are capable of applying excellent fundamental training to a wide range of specific jobs. "Nothing contributes more damagingly to the unemployment of educated talent than rigid specialization and rigid attitudes supporting this specialization. The future is necessarily hazardous for the individual who trains himself to do a specific job, receives an advanced degree for that line of work and believes that society owes him a living doing it. If technological innovations reduce the demand for his specialty, he has nowhere to go. On the other hand, if he is broadly trained in fundamental principles, and knows that he may have to apply those principles in varying contexts over the years, he is in a position to survive the ups and downs of the job market." (John W. Gardner, Excellence: Can We Be Equal and Excellent Too? [New York: Harper and Brothers, 1961], pp. 42-43).

6. Roe in her study of outstanding scientists (Anne Roe, The Making of a Scientist [New York: Dodd, Mead and Co., Apollo Edition, 1955]); MacKinnon in his assessments of highly creative people (Donald W. MacKinnon, "The Nature and Nurture of Creative Talent," American Psychologist, Vol. 17, 1962, pp. 484-495); and the Goertzels in their review of the biographies of eminent men and women (Victor and Mildred Goertzel, Cradles of Eminence [Boston: Little, Brown and Co., 1962]) all report that these individuals who were leaders in their fields indicated a similar desire for freedom and challenge in education and an equal distaste for teacher-assigned drill and memory work.

7. Elizabeth Monroe Drews, "Profile of Creativity," National Education Association Journal, January, 1963, pp. 26-28.

8. James S. Coleman, The Adolescent Society (New York: Free Press of Glencoe, 1961).

9. Aldous Huxley, Island (New York: Harper and Brothers, 1962).

10. The recent research involving classroom observation and study of teacher behavior by Marie Hughes at the University of Utah (Marie M. Hughes, Development of the Means for the Assessment of the Quality of Teaching in the Elementary Schools [Salt Lake City: the University of Utah, 1959]), and Ned Flanders at the University of Minnesota and the University of Michigan (Ned A. Flanders, Teacher Influence, Pupil Attitudes and Achievement, Final Report of the Cooperative Research Program, 397, U.S. Office of Education [Minneapolis: University of Minnesota, November 30, 1960]) makes this very clear. Both investigators have done their studies with funds provided by the U.S. Office of Education.

B. An Experimental Program Designed to Foster the Creative Intellectual Style

11. Rollo May, "The Origins and Significance of the Existential Movement in Psychology," Rollo May et al. (eds.), Existence: A New Dimension in Psychiatry and Psychology (New York: Basic Books, Inc., 1958), p. 12.

12. Abraham Maslow, Motivation and Personality (New York: Harper & Brothers, 1954).

13. Abraham Maslow, Toward a Psychology of Being (Princeton: An Insight Book, D. Van Nostrand Co., Inc., 1962), p. iii.

14. M. F. Ashley Montague, Education and Human Relations (New York: Grove Press, 1958), p. 94.

C. A New Focus for Education

15. This section was adapted from the chapter, "Self-Actualization: A New Focus in Education," in the 1966 ASCD Yearbook entitled Mental Health and Learning in the School.

16. Elizabeth Monroe Drews, Student Abilities, Grouping Patterns, and Classroom Interaction; Final Report of the Cooperative Research Program, 608, U.S. Office of Education, "The Effect of Homogeneous and Heterogeneous Ability Grouping in Ninth Grade English Classes with Slow, Average, and Superior Students" (East Lansing: College of Education, Michigan State University, 1963).

17. John E. Arnold, "The Generalist Versus the Specialist in Research and Development," The Creative Person, The Institute of Personality Assessment and Research (Berkeley: University of California, 1961), Chapter IX. (The proceedings of a conference held at the Tahoe Alumni Center, October 13-17, 1961. Donald W. MacKinnon, Director.)

18. Julian Huxley, "The Humanist Frame," in Julian Huxley (ed.), The Humanist Frame (New York: Harper and Brothers, 1961), pp. 13-48.

19. Gordon Allport, Becoming: A New Dimension in Psychiatry and Psychology (New Haven: Yale University Press, 1955).

20. This point of view has been explained and documented experimentally by Carl R. Rogers. See Client-Centered Therapy (New York: Houghton Mifflin Co., 1951), and On Becoming a Person (Boston: Houghton Mifflin Co., 1961).

21. Margaret Mead, *Continuities in Cultural Evolution* (New Haven: Yale University Press, 1964), p. 239.

22. Ralph H. Ojemann, "The Human Relations at the State University of Iowa," *Basic Approaches to Mental Health in the Schools*, a reprint series from *The Personnel and Guidance Journal* (Washington, D.C.: American Personnel and Guidance Association, 1960).

23. John W. Gardner, *op. cit.*, p. 154.

24. John Dewey, *Democracy in Education* (New York: Macmillan Co., 1916).

25. Jerome S. Bruner, *The Process of Education* (Cambridge: The Harvard University Press, 1960).

26. Jerome S. Bruner, *On Knowing, Essays for the Left Hand* (Cambridge: The Belknap Press of Harvard University Press, 1962).

27. James J. Gallagher, "Productive Thinking," *Review of Child Development Research*, Vol. I (New York: Russell Sage Foundation, 1964), pp. 349-381.

28. J. P. Guilford, P. R. Merrifield, Anna B. Cox, *Creative Thinking in Children at the Junior High School Levels*, Cooperative Research Project No. 737, U.S. Office of Education (Los Angeles: University of Southern California, 1961).

29. E. Paul Torrance, *Guiding Creative Talent* (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1962).

30. Hilda Taba (Principal Investigator), Samuel Levine, and Freeman F. Elzey, *Thinking in Elementary School Children*, Cooperative Research Project No. 1574, U.S. Office of Education (California: San Francisco State College, 1964).

31. J. Richard Suchman, *The Elementary School Program in Scientific Inquiry*, Title VII, Project No. 216, N.D.E.A., Grant No. 7-11-038, June, 1962. (Also published Urbana: University of Illinois Press, 1963.)

32. *Innovation and Experiment in Education*, A Progress Report of the Panel on Educational Research and Development to the U.S. Commissioner of Education, the Director of the National Science Foundation, and the Special Assistant to the President for Science and Technology (Washington, D.C.: U.S. Government Printing Office, March, 1964).

33. Paul Tillich, *The Courage To Be* (New Haven: Yale University Press, 1952).

34. J. Richard Suchman, *op. cit*.

35. Donald Oliver, Harvard Graduate School of Education.

36. Elizabeth Monroe Drews, THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS; *Being and Becoming: A Cosmic Approach to Counseling and Curriculum*, Report II, *op. cit*.

37. Bernard Berelson and Gary Steiner, *Human Behavior: An Inventory of Scientific Findings* (New York: Harcourt, Brace and World, 1964).

38. John W. Gardner, *op. cit*., p. 141.

39. Robert W. White, *Lives in Progress* (New York: Holt, Rinehart and Winston, 1952), p. 4.

40. *Ibid*., p. 5.

41. Lewis Mumford, *The Conduct of Life* (New York: Harcourt, Brace and Co., 1951), p. 36.

42. Erik Erikson, "Youth: Fidelity and Diversity," *Daedalus*, Vol. 91, Winter, 1962, pp. 5-27.

43. Bruner feels that mathematics is the most general of metalanguages, noting that it provides the forms and patterns in terms of which regularities in nature are comprehended. He also feels that poetry performs a similar function in that it helps with the search for likenesses beneath the surface of diversity and change--is a vehicle for searching out unexpected kinship. (Jerome Bruner, "Education as Social Invention," *The Journal of Social Issues*, Vol. 20, July, 1964, pp. 21-33.)

44. Robert Theobald, *Free Men and Free Markets* (New York: Clarkson N. Potter, Inc., 1963).

45. Dennis Gabor, *Inventing the Future* (New York: Alfred A. Knopf, Inc., 1964).

46. Roger W. Brown, *Words and Things* (Glencoe, Illinois: Free Press, 1958).

IV. METHOD: SETTING AND POPULATION
DESIGN AND INSTRUMENTATION

A. Setting*

In an effort to understand the problems of educating able youth,** it is necessary to keep in mind the importance of the totality of the environment in which the individual lives. In addition to the school, his environment includes the family, peer and community cultures with which he comes in everyday contact and which have a role in shaping his interests and attitudes. In introducing this chapter, we will consider the character and contributions of the environment and describe the general social-cultural milieu of the city of Lansing, in which this study was conducted.

Lansing is a Midwestern city with a population of 120,500 (July 1, 1963, estimate); the adjoining city of East Lansing has a population of 45,000 including Michigan State University students who live on the campus and in East Lansing. The metropolitan area has a population of over 200,000.[1]

The major economic force in Lansing is the motor vehicle industry, which as recently as 1958 accounted for 83 per cent of the total manufacturing output.[2] Government spending (Lansing is the state capital) is the second major economic support with 24,000 people employed in state offices. The third economic force in the area is Michigan State University, which not only employs a large number of people but also contributes approximately 36,000 students (at all degree levels) to the general consumer economy. The University and the state government account for a large number of the professional and white-collar workers in the area. It should be noted, however, that most of the University faculty live in East Lansing and Okemos rather than Lansing proper, and thus there may be less direct influence of the University upon Lansing young people than would be expected.

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*This description of the setting is similar for Reports I, II and III, THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS.

**The position taken in this research is that the education of gifted adolescents should include among its aims the development of identity, of motivation to learn, and of openness to change and purposively work toward these ends.

Other than these three major concerns, there are few large industries or important enterprises which affect the Lansing area's economy or which employ a large number of people. This kind of community, when compared to larger metropolitan areas, creates for the adolescent a certain narrowness in the diversity of career opportunities and life experiences to which he is exposed. Typically, adolescent boys and girls come into contact more or less exclusively with adults, their teachers excepted, who are in the same occupational category as their parents. This restricted exposure to possibilities undoubtedly limits awareness of the wide variety of career choices and life styles which are available for all adolescents today and especially for those who are intellectually gifted. Even if a student exhibits precocious ability in an area, it may not be recognized, and almost certainly such a gifted student will not be brought into close association with adults who might be models of excellence in that particular field (unless the precocity is shown in athletics). The result is that the youth with unusual talent will not receive the recognition and encouragement needed for his talent to flourish. Particularly, he is not apt to receive special instruction and guidance if he shows unusual intellectual excellence.*

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*Pressey indicates that much more approval, as well as much more individual guidance and instruction, are given if the excellence emerges in athletics or music than is true

From the standpoint of supplying the creature comforts and the educational basics, the situation in Lansing is a good one. Economically and educationally the Lansing citizen is above national norms. The per capita income for the Lansing area in 1958 was 6 per cent above the national average.[3] In 1959, the median number of school years completed for parents by a sample of 331 Lansing students with average ability was 11.5 for fathers and 11.8 for mothers,[4] as compared with a national median of 10.6 in 1960.[5] The parents of superior students in the Lansing schools were, as might be expected, even better educated than the average parent. In the 1959 study, the median number of years spent in school was 12.4 for the mothers and 12.5 for the fathers of all students in the ninth grade identified as having IQ's of 120 or above.[6]

The mere existence of a good environment may not mean that a student will or can take advantage of the offerings. Within the Lansing area, there is a remarkably wide range of available recreational and cultural opportunities, and the bordering city of East Lansing and the University that is located there offer outstanding programs of an aesthetic and intellectual nature. In fact, even though the Lansing-East Lansing complex cannot be called a "big city," it offers an exceptionally rich variety of cultural and recreational opportunities that are often available only in the largest cities. It is possible to attend a wide variety of concerts, art exhibits, dramatic presentations, lectures and civic activities. Beyond this, museums, the cyclotron, the computer laboratory and the

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when the gifts are purely intellectual. He notes that when intellectual gifts are recognized the effort is often made to discourage their development (usually in the name of social adjustment) rather than to facilitate it. (Sidney L. Pressey, "Concerning the Nature and Nurture of Genius," The Scientific Monthly, Vol. 81, September, 1955, pp. 123-129).

planetarium are available on the campus at convenient hours.[7]

However, despite the obvious richness of this environment, most of the able students in the Lansing schools have little contact with the aesthetic and intellectual realms. In contrast, the recreational opportunities (Lansing is near a number of lakes and wooded areas) are used extensively. Most families seem to be able to participate in some form of recreation, and few lack clothing or food--students tend to be well fed and physically fit. However, they are more apt to know how to catch fish than to be able to identify the surrounding flora and fauna, and they probably understand motorboats better than they do classical music.

Despite the fact that many able Lansing students do not participate in the seemingly accessible cultural events, most are aware of the arts and would like to become consumers in this area. The problem appears to be that they do not know how to engage in the culture about them. There appears to be a lack of parental encouragement for participation in or sampling of the aesthetic and intellectual offerings of the community. Students take music lessons but many neither listen to good music in their homes nor attend concerts with their parents. In a survey of ninth grade students in an accelerated English program in the Lansing school system made in May, 1964, it was found that 43 per cent of the boys and 26 per cent of the girls had never attended a symphony, although almost all of the boys and the girls reported that they would like to. Similarly, 80 per cent of the boys and 91 per cent of the girls had never seen a ballet, although 50 per cent of the boys and 96 per cent of the girls evidenced a desire to attend.[8]

B. Population

The present study is the second phase of the research which we have referred to in Chapter III as Report II on the CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS. The report was subtitled Being and Becoming: A Cosmic Approach to Counseling and Curriculum and was concerned with the testing of attitude change as the result of a specially developed program (films, text). At the time the students were introduced to this program they were beginning the ninth grade. All Lansing junior high students who scored at least two years above their grade level in reading comprehension,* i.e., read at eleventh grade level or higher in May, 1962, were selected as the parent population. In June, 1962, the 243 students (maximum sample)** who had been chosen from this parent population were assigned randomly to an experimental or control class by the assistant principal in the four junior high schools.*** They remained in these classes throughout the 1962-1963 school year, although the duration of the experimental program was from September, 1962, until February, 1963. In the fall of 1963 the students entered the three Lansing senior high schools.**** The attendance at the three high schools is determined by a different districting policy than is true with the junior high school population, and thus students found themselves with many new classmates. Furthermore, when advanced classes in social studies or in other subjects were offered in the senior high schools no discrimination was made between experimental and control students. Thus, there were many opportunities for interchange of ideas among the superior population--among students who came from the different junior high schools and between experimental and control groups. If, as the young people told us, they liked to discuss books they read, theories they held and ethical issues, there was considerable opportunity for them to influence one another.

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*Because a large part of the study involved reading materials written on an adult (college) reading level, the students in the population were selected on the basis of their comprehension scores on a reading test rather than on an intelligence measure. Reading level scores were obtained by the California Reading Test (CRT), Advanced Form, edited by W. E. Tiegs and W. W. Clark (California Test Bureau, 1950). Only the comprehension section of the test was used in the present study. In this section there is an emphasis on following directions, on reference skills and interpretations of meanings. Scores on this test, as on all California achievement tests, are intended to indicate grade placement and percentile rank of students in relation to a normative school population.

**The minimum sample for whom all major data were complete was 198 students.

***The junior high schools are W. French, C. W. Otto, Pattengill and West.

****The senior high schools are Eastern, Everett and Sexton.

On March 4, 1964, experimental and control students were retested. Inasmuch as it was impossible to make arrangements to retest students during the school day, we used the suggestion of the superintendent that we do follow-up testing on a holiday. BIE Day* was the only day when students were dismissed from school that came approximately a year after our post-testing sessions at the end of the experiment (the last week of February, 1963) and seemed acceptable to a majority of students as a testing date. Only those young people who had completed the post-testing were contacted. In each of the three senior high schools, these students were met in groups by a counselor and member of our research staff and at this meeting Phase II Testing was explained. Inasmuch as participating in retesting was to be voluntary on the part of the students, we wanted them to understand the situation as completely as possible.

Testing took place in the Union Ballroom on the Michigan State University campus. The tests were administered by our research staff and by school counselors. Table 1 reports the number who took the Phase II tests and gives percentages based on a comparison of the number for whom data were complete in the spring of 1963 and the number who were retested. The percentages were lowered somewhat by the fact that a number of the students in the original testing program (both in experimental and control groups) were no longer enrolled in the Lansing Public Schools.

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*Teachers were participating in BIE (Business, Industry, Education) Day.

TABLE 1

DISTRIBUTION OF THE POPULATION IN THE PHASE II STUDY BY BOYS, GIRLS, TOTALS IN EXPERIMENTAL AND CONTROL GROUPS

	Experimental			Control		
	1962-63 test[a]	1964 test[b]	Population retested	1962-63 test[a]	1964 test[b]	Population retested
Boys	48	35	73%	38	26	68%
Girls	55	46	84%	57	45	79%
Totals	103	81	79%	95	71	75%

[a] Number completing both the pre- and post-tests.

[b] Number completing the Phase II tests.

In the discussion that follows, we shall describe the experimental and control groups in terms of their reading comprehension and intelligence scores, parents' education, fathers' occupational status and family size--which data were obtained when they were ninth graders.* Data pertaining to academic aptitude are also given and were gathered from the Differential Aptitude Test which was administered at the ninth grade level and the National Merit Scholarship Qualifying Test which was given when the students were eleventh graders.

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*It was felt that although the information given is from data a year old when the students were retested that it still is a fairly accurate population description.

Reading Comprehension (Table 2): The scores on the CRT, Advanced Form, ranged from 11.0 to 14.7 for the experimental group, and 11.0 to 16.5 for the control group. The means were similar with the experimental group averaging 12.32, while the average for the control group was 12.27.

TABLE 2

MEANS[a] FOR GRADE LEVEL SCORES ON THE CALIFORNIA READING COMPREHENSION TEST BY BOYS, GIRLS, TOTALS IN EXPERIMENTAL AND CONTROL GROUPS

	Experimental	Control
Boys	12.25	12.39
Girls	12.38	12.20
Total	12.32	12.27
Range	11.0 - 14.7	11.0 - 16.5

[a] Mean differences between experimental and control groups were analyzed using a two-tailed *t*-test and none was significant.

Intelligence (Table 3): Verbal scores on the California Test of Mental Maturity (CMM) were used as a measure of intelligence. Scores on the CMM for the experimental group ranged from 100 to 145 with a mean of 123.38, and for the control group ranged from 97 to 159 with a mean of 122.31. Because the students in these classes were chosen on reading scores rather than on the basis of intelligence, some of the students' IQ ratings were lower than would ordinarily be expected of individuals in an intellectually superior population. Approximately 27 per cent of this group tested below 120 IQ on the CMM.

Aptitude--DAT (Table 4): On the Differential Aptitude Tests (DAT), the ranges for the experimental and control groups were identical--from the 25th to 99th percentile. The means for the groups were slightly different, with the experimental group averaging 83.35, and the control group averaging 81.85.

TABLE 3

MEANS[a] FOR VERBAL IQ'S ON THE CALIFORNIA TEST OF MENTAL MATURITY BY BOYS, GIRLS, TOTALS IN EXPERIMENTAL AND CONTROL GROUPS

	Experimental	Control
Boys	122.58	122.26
Girls	124.06	122.35
Total	123.38	122.31
Range of IQ's	100 - 145	97 - 159

[a] Mean differences between experimental and control groups were analyzed using a two-tailed t-test and none was significant.

TABLE 4

MEANS[a] FOR PERCENTILES ON THE DIFFERENTIAL APTITUDE TESTS BY BOYS, GIRLS, TOTALS IN EXPERIMENTAL AND CONTROL GROUPS

	Experimental	Control
Boys	83.33	81.07
Girls	83.38	82.37
Total	83.35	81.85
Range	25 - 99	25 - 99

[a] Mean differences between experimental and control groups were analyzed using a two-tailed t-test and none was significant.

Aptitude--NMSQT (Table 5): In the eleventh grade, the National Merit Scholarship Qualifying Test is offered to all qualified students. The purpose of this test is "to discover exceptionally talented young people, and encourage them to obtain a college education." It is designed as a test of educational development and measures the student's ability to think critically and apply the methods of problem solving. The percentile range for the experimental group was 45 to 99 and for the control, 50 to 99. The median rank for both groups places them well above average for the nation's sixteen-year olds. The mean selection scores are also reported and there were no significant differences between the experimental and control groups.

TABLE 5

MEAN SELECTION SCORES AND MEDIAN PERCENTILE RANK ON THE NATIONAL MERIT SCHOLARSHIP QUALIFYING TEST BY BOYS, GIRLS, TOTALS IN EXPERIMENTAL AND CONTROL GROUPS

	Experimental		Control	
	Mean[a] Selection	Median Percentile	Mean[a] Selection	Median Percentile
Boys	119.00	89	119.00	89
Girls	116.94	88	114.28	86
Total	117.86	89	115.97	88

[a] Mean and median differences between experimental and control were analyzed using a two-tailed t and none was significant.

Family Background (Table 6): Additional descriptive information, including parents' education, socio-economic status and family size, was acquired from pupil questionnaires, school files and, occasionally, from interviews with teachers, administrators and parents. Examination of these data shows that the parents' educational level was not significantly different for the two groups. Fathers of students in both the experimental and control groups generally had some college, business or technical training, while the mothers of students in both groups had, on the average, completed the twelfth grade. When the Father's Occupation was the criterion (using Warner's Index of Status Characteristics) the median socio-economic status was 3 for both experimental and control groups. In other words, fathers were generally white collar, but there was a considerable number of blue-collar workers in the group. When means were computed for Father's Occupation, the socio-economic status was 3.17 for the experimental group which was slightly higher than the 3.45 derived for the control group. However, this slight difference between the groups was not significant. The median family size (number of children in the family) was three children for students in both groups.

TABLE 6

MEANS AND MEDIANS FOR PARENTS' EDUCATION, FATHER'S OCCUPATIONAL STATUS AND FAMILY SIZE IN EXPERIMENTAL AND CONTROL GROUPS

	Experimental		Control	
	Mean*	Median	Mean*	Median
Father's Education[a]	4.9	5	4.8	5
Mother's Education[a]	4.59	4	4.44	4
Father's Occupation[b]	3.17	3	3.45	3
Family Size[c]	3.0	3	2.9	3

*Differences between experimental and control mean scores on Father's Occupation were analyzed using the two-tailed _t_ and were not significant.

[a] _Scale for level of education_

1. Less than seventh grade
2. Through grades seven or eight
3. Through grades nine or ten
4. Through grades eleven or twelve
5. Some college, business or technical training
6. Finished college
7. Attended graduate or professional school after college
8. Received an advanced degree--M.A. level
9. Received an advanced degree--Ph.D. level (includes other doctoral degrees as well)

[b] _Warner Scale for Father's Occupation_

The range of this scale extends from 1 (high-level professional or business executive) to 7 (unskilled laborer or domestic servant). (For full scale, see Report II.)

[c] Family Size refers to the number of children in the family.

C. Procedure for Phase II Assessment

Testing for Phase II of the experimental program* was done at the beginning of March, 1964, just one year after the post-testing for the study was completed. The students in the population were then completing the tenth grade. As was indicated in the population description, attendance was voluntary and students were notified by their school counselors that testing would be done on the morning of March 4, a school holiday. The only special inducement that was used to entice students to come was the announcement that University facilities (including the Abram's Planetarium, the Kresge Art Center, the Natural History Museum and the Computer Center) would be open for them, and that they were invited to hear musical and dramatic presentations by Michigan State University students and a speech by Dr. Stanley Idzerda, Director of the Honors College.

The Phase II testing replicated the assessment battery used for pre- or post-testing (September, 1962, and March, 1963) except for one instrument (the Rokeach *Dogmatism* and *Rigidity Scales*) which was not used in the 1964 testing session. These scales did not distinguish the experimental and control groups at either pre- or post-testing in the experiment.**

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*For a detailed description of the program, see the second report of the series entitled THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS: *Being and Becoming, a Cosmic Approach to Counseling and Curriculum*.

**During the experimental year we made a careful examination of all of the items on the two scales, looking at them in terms of the focus the study had taken as it was revised and as our materials were being developed. It was our decision, as a result of this item inspection, that a number of statements were antithetical to the aims of our program. This is particularly true in relation to our dedication to humane principles and our belief that a development of a personal "sense of destiny" (the idea that an individual can and should make a difference in his society) is desirable. The Rokeach scales classified many

Information of a somewhat clinical nature was gathered. These highly individualized data supplemented our group test data. All students were observed ten times in the experimental classroom settings, and some of the students were interviewed as well. Data from the classroom observations include the frequency of each student's participation in the discussions,* evaluations of the quality and climate of each classroom discussion, and descriptions of any unusual incident or contribution which might relate to a given individual or to an entire class. This information was gathered by two observers who were familiar with the content and

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responses of this nature as dogmatic or rigid, inferring that an increase in open-mindedness is nullified by an equally strong increase in idealism. Our course was designed to encourage a different belief--that ideals and commitments can exist simultaneously with openness and flexibility (i.e., "non-rigid" and "non-dogmatic" behavior) to contribute to "the good life."

*Sylvia Couturier has made a detailed study of the contributions of the 45 students chosen to be interviewed. This analysis was based on the statements made by individuals in the ten discussions in which each student participated. In addition, Caryl Anderson made an extensive study of the written comments students made following the discussions. In the last ten minutes of each period students were asked to react to the following questions:

1. Are you interested in the subject of the discussion? (Yes, No) Explain.
2. What did you feel were the most important ideas talked about today?
3. Did you agree with everything that was said? (Yes, No) If no, tell what you didn't agree with.
4. What else should have been said on the topic?
5. How would you rate your part in the discussion? (Check one in A and one in B)
    A. Better than others; About the same as others; Not as good as others.
    B. Better than I usually do; Same as I usually do; Not as good as I usually do.
6. Do you think you could have made better comments than you did? (Yes, No) If yes, why didn't you?
7. What do you think was the quality of the oral discussion? (Outstanding, Good, Average, Fair, Poor)

objectives of the experimental course and who became equally familiar with the experimental students through the formal classroom observations and their informal conversations with the students.

A selected group of 45 experimental students was interviewed twice--once at the end of the ninth grade (approximately six months after the termination of the experimental program) and again at the end of the tenth grade. The interviews were designed to provide information on family background and to explore in depth, student interests, attitudes and behavior. The students selected to be interviewed were, primarily, those whose tested attitudes and observed _and_ reported behavior were most "true to type."* Since the focus of this research has been the creative intellectual style in adolescence, the largest group of students interviewed were those who had demonstrated strong creative intellectual inclinations by scoring at least one standard deviation above the mean on three or more scales of the _Omnibus Personality Inventory_.** Several who scored at least one standard deviation below the mean on three or more _OPI_ scales and/or showed motivational patterns of a studious or social leader nature were studied to supply antithetical emphasis.

The interviews were conducted at Michigan State University by young adults who had psychological training and who had demonstrated their ability to establish rapport.

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*Exceptionally high and low scorers on the _OPI_ scales were interviewed. In addition, we interviewed several students whose _OPI_ scores were not as high, but who identified themselves as CI, on the _Student Profile Check_. The latter were observed to behave in typical CI ways, approximating but not completely fitting (on some _OPI_ scales) the selection criteria.

**In the first report in this series the validity of the creative intellectual style as one of three typologies was studied. It was found that five scales on the _OPI_ successfully discriminated the creative intellectual (chosen on self-description) from other student types.

with adolescents. The general purpose of the interview was explained to the students and their parents by letter and telephone conversation, and each student received a detailed explanation at the beginning of the interview. The students were assured that everything said during the interview would be held confidential. During the interviews the recorder was in full view of the student. Since the two-hour interviews did not involve a change of tape, most students soon seemed unaware of the recording process.*

The data from the interviews, supplemented at times by other information--obtained from self-reports and observations made in and out of school, serve as the primary source for the case histories presented in Chapter VI. Certain free response materials such as essays, answers to open-ended questionnaires, and the personalized textbooks have also been analyzed and are the source of many new insights.

D. Instruments and Hypotheses for Phase II Assessment

In our presentation thus far we have indicated that a major concern in this research was to determine whether or not having participated in a special program would increase students' self-actualizing tendencies and whether changes already noted would be self-sustaining. The second focus, as mentioned in Chapter III, was an effort to get a broader and deeper understanding of the adolescent who appeared, by his self-descriptions and our observations, to most fully exemplify the creative intellectual style. Thus, in the two aspects of this third report we have tried to achieve a balance between investigative economy (looking at a limited number of variables for a relatively larger

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*In fact, many of the students when told that their comments would be recorded seemed to enjoy the fact that their contribution was to be preserved in this way.

number of students) and clinical complexity (looking at a small number of students intensively so that uniqueness could be taken into account). We felt that our testing program, in common with most testing programs, was segmental and did not take into consideration many important dimensions of the students' lives, particularly their more individual attitudes, their relationships with their families and their early history. It was our view that the results of the testing (the segmental study) could not be adequately interpreted without the additional context of case history data.

In our original effort to assess evolution toward the creative intellectual style we compared post-test results of the experimental and control groups on a number of instruments. These measures were chosen as indicative of attitudes, interests and values in the general areas of motivation for learning, openness to psychological growth, and acceptance and concern for other human beings. The instruments were, for the most part, ones we had tried out in previous studies.[9] Some of the instruments were standardized and have been used extensively on other populations[10] while others (including ones we had employed in testing at the end of the experiment) were of an informal nature. These latter measures were used to tap areas which we had found important when looking at the dimensions of creative style and self-actualization in our previous research and for which we had found no standardized tests available.

The formal measures were selected to give insights into personality traits and attitudes related to the creative intellectual style. In addition, a test of critical thinking was administered. One set of informal measures was devised to provide further understanding of creative intellectuality, particularly as this quality was exhibited in adolescents by their present interests and patterns of life and their plans for the future. All of these assessments, both formal and informal, were used in the pre- and post-testing of Phase I and, with one exception, this was also true of the follow-up study which we have designated as Phase II. The remaining informal measures (those related to what we have called the feminine dimension) were developed as the program progressed--as we reached new understandings about the interaction between our materials and the reactions of able adolescents, the latter group of instruments was used for post-testing in Phase I, and repeated a year later in the Phase II testing. Because case history data are to be an important part of this third report, we developed two interview schedules. The first schedule was adapted from one which MacKinnon used with creative adults. In both schedules our effort was to concentrate on those aspects of the personality and life style which seem most relevant for the understanding of self-actualization in superior youth.

1. Formal Measures

The instruments we have designated as formal measures all have been used extensively with college and adult populations and have been found to differentiate between creative (idea-oriented and open-minded) individuals. These included the Omnibus Personality Inventory (OPI),[11] the Allport-Vernon-Lindzey Study of Values (A-V-L)[12] and the American Council on Education's Critical Thinking Test, Form G.[13]

The Omnibus Personality Inventory (OPI) was constructed by Paul Heist and Phoebe Williams in 1957 at the Center for the Study of Higher Education in Berkeley, California. The purpose of the OPI varies from that of many personality tests in that it measures motivation to learn and openness to psychological growth rather than psychopathology. The items are clustered into a number of personality scales that are considered by the Berkeley researchers to be particularly pertinent to the study of intellectual and psychological growth in college students. In our earlier research the instrument appeared to be equally valuable to measure the attitudes (and attitude change) of able high school students.

We chose five of the OPI scales, Originality, Complexity, Estheticism, Theoretical Orientation and Thinking Introversion, to use in our present study of the patterns of growth motivation in able adolescents. These scales are specifically concerned with personality variables which have been hypothesized, on theoretical grounds, to be characteristic of self-actualizing people--a thesis which the research findings of Warren and Heist[14] on creative college students support and which our earlier study on the creative intellectual style in high school students also seems to uphold.[15]

Brief descriptions of the attributes that these five scales primarily measure are given below:

> Originality: The O scale, adapted from research by Barron and Gough at the University of California, measures a tendency toward highly organized but individual ways of reacting to environment. Characteristics of high scorers are independence of judgment, freedom of expression, rebelliousness, rejection of suppression and novelty of insight.
>
> Complexity: The Co scale, adapted from an earlier instrument developed by Barron, distinguishes between people who perceive and react to complex aspects of their environment and those who generally react to more simple stimulus patterns. High scorers are more independent, liberal, critical, unconventional, and potentially are more original and creative: they welcome the new and different in their experiences. Low scorers tend to be compliant, conservative, accepting of authority and tradition, and simpler in their organization and perceptions.
>
> Estheticism: High scorers on this Es scale find value in form and relationships and seek major

satisfactions in the "artistic episodes of life" as these are expressed by literature as well as by art and music.

Theoretical Orientation: The TO scale measures the tendency of people to look for theory rather than isolated facts. Scientists, especially the more creative scientists, tend to be strongly oriented in this direction. A high score on this scale usually indicates a desire to deal with the general rather than the specific.

Thinking Introversion: The TI scale derives from work conducted by Catherine Evans and T. R. McConnell, and high scores indicate a preference for reflective thought, particularly thought of an abstract nature. High scorers are interested in ideas and concepts, and they tend to be less influenced by external conditions and commonly professed ideas than are low scorers.

The second personality inventory used, the Study of Values (A-V-L), measures six value orientations.* This test is a widely used one which, in the words of its authors:

> . . . aims to measure the relative prominence of six basic interests or motives in personality: the theoretical, economic, aesthetic, social, political, and religious. The classification is based directly upon Edward Spranger's Types of Men, a brilliant work which defends the view that the personalities of men are best known through a study of their values or evaluative attitudes.[16]

The test is constructed on a forced-choice basis, so that high scores on any one scale necessitate low scores on some other scale or scales. The six scores can therefore be interpreted only in relation to each other; a high score on a scale indicates only that this orientation is more highly valued than the orientation on which a subject receives a low score. Heist and his colleagues at the Center for the Study of Higher Education have noted a pattern of scoring on the A-V-L which shows that highly creative individuals who take the test have high theoretical and aesthetic scores, low economic and political scores.

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*This test was published first as the Allport-Vernon Study of Values in 1931 and revised as the Allport-Vernon-Lindzey Study of Values in 1951.

The six value orientations measured on the A-V-L are:

> Theoretical: This orientation characterizes a person with a dominant interest in the discovery of truth, one who is concerned with cognitive approaches to reality, and one who is critical, rational, and given to intellectualizing. (Findings at both Berkeley Centers show interest in scientific fields to be a strong correlate of this orientation.)
>
> Economic: The person high on this scale is interested primarily in the utilitarian and the practical and in the accumulation of material goods and its associated activities.
>
> Aesthetic: The aesthetic person places great value on form and harmony. His major orientation is toward a pleasing organization of sensory experience, and toward the artistic aspects of the environment.
>
> Social: The high scorer on this scale is oriented toward people as such without regard to theoretical, aesthetic or practical attitudes, which he may regard as cold and inhuman.
>
> Political: The political value does not necessarily indicate interest in the field of politics, but chiefly an interest in power and influence over others. The person who scores high on this scale likes the struggle and competition with which power is commonly associated.
>
> Religious: The person scoring high on this scale is something of a mystic, seeing the highest values in a search for the meaning of life and in comprehension of the cosmos as a whole.

The third instrument used in the present study was the American Council on Education's Critical Thinking Test, Form G. This test was constructed at Michigan State University as a part of an inter-university project, entitled The Co-operative Study of Evaluation in General Education, which was directed by Paul Dressel. The items used in the test were devised and tested by project workers at twenty different institutions, and the test was finally constructed by Dr. Dressel. The instrument is a 52-item scale of objective questions designed to measure the main abilities thought to be involved in the problem-solving aspect of critical thinking--the ability to recognize and define a problem, to select information pertinent to its solution, to recognize stated and unstated assumptions, to formulate and evaluate hypotheses, and to judge the validity of inferences from the evidence given.[17]

2. Informal Measures--The Creative Intellectual Style

In our earlier study with high school students, we found that although the tests which effectively differentiated more creative from less creative adults seemed to contribute to our understandings of the more and the less creative adolescents, there were some ways in which these instruments were inadequate for a young population. The adult tests did not tell us what the interests of these adults had been when they were fourteen and fifteen. We did not know, for example, how the adolescent plans for the future of the highly creative adults had differed from those of the less creative adults, nor did we know the differences in adolescent self-descriptions between the two groups. For these reasons, we used instruments that we had developed in our earlier research with superior adolescents and that had already shown promise in distinguishing the more creative from the less creative young person in all three testing sessions.

These informal instruments are refinements of measures developed during a five-year period (1957-1962) of studying gifted adolescents. They include the Student Interest Survey Scales (incorporated into the Student Interest Survey V), the Reasons for Occupational Choice and the Student Profile Check.

The Student Interest Survey (SIS) is a questionnaire that elicits information on student family background, current interests and activities, attitudes toward school and learning, and plans for the future. Within this questionnaire are three scales (referred to subsequently as the SIS Scales) comprised of items that had significantly differentiated the responses of students identified (in an earlier study on the Student Profile Check) as creative intellectual, studious and social leader on previous surveys.

The second informal measure, Reasons for Occupational Choice (ROC), consists of a checklist of nine possible reasons for choosing a career, with the students being asked to pick the three reasons most important to themselves. This instrument had been refined from a longer list of items which had previously been a part of the Student Interest Survey. Each of the nine reasons had significantly differentiated students identified as studious, creative intellectual or social leader on the Student Profile Check, with three of the choices identified as studious reasons, three as creative intellectual reasons, and three as social leader reasons. For the analysis the nine items were combined in these groups of three in accordance with the student types.

A third measure, Student Profile Check, is a set of three descriptions of student "types" (creative intellectual, studious and social leader), which have been developed and refined over a period of years, beginning in 1959 and tested formally in the school year 1960-61.[18] Students are asked to check the type of student that most nearly describes them.

3. Informal Measures--The Feminine Dimension

In addition to the concern with the education and guidance for gifted adolescents in general, the research has been especially concerned with the gifted girl: how to make her aware of her creative potential, to encourage her to choose a high level career, and to increase the acceptance (by both boys and girls) of women who do choose life styles that are commensurate with their abilities. The study has also been directed toward developing the much needed social concern and humanitarian beliefs (often identified as "feminine" qualities) among both boys and girls. These objectives became clarified as the films and text were completed and as we watched student reactions. Much of the prejudicial and stereotypical thinking seemed centered in the area that we designated as acceptance of women and general humanitarian-altruistic attitudes.*

To measure differences (between experimental and control groups) in the acceptance of both the self-actualization of women and in the acceptance of more humane ways of thinking, informal instruments were developed. These include the _Acceptance of Women Scale_, _Self-Actualization in Women_ and the _Humanitarian-Altruism Scale_** and were administered at the end of the experimental year, and in the Phase II testing a year later.

The _Acceptance of Women Scale_ is comprised of true-false items that asked for the testee's acceptance or rejection of statements of fact, opinion and prejudice that are relevant to the acceptance of women as self-realizing individuals who must of necessity engage in diverse roles, including creative activities and professional endeavors. The scale contains items which are both positive and negative in relation to acceptance of women, and a high scorer was assumed to hold more favorable attitudes toward diversified roles and self-actualization in women than a low scorer.

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*Another dimension generally considered feminine and widely rejected by the boys was the aesthetic mode. These were tested with two formal instruments (see aesthetic scales on _OPI_ and _A-V-L_) and introduced through the Aesthetic World in the _Four Worlds Textbook_.

**A revised form of this instrument was used in Phase II.

The second informal measurement, Self-Actualization in Women, is a set of three paragraph descriptions of girls. Many of the values specified in the Acceptance of Women Scale are included in these paragraphs. The first description (level 1) portrays a "strictly female female" who does not plan to attend college or to develop a distinct identity; the second (level 2) describes a girl who plans to attend college for a year or two and then marry--she tends to reflect in her development the needs and interests of her husband and children rather than to develop and sustain a personal style; and the third (level 3) portrays a girl who wants to graduate from college and perhaps attend graduate school, to become creative artistically and intellectually as well as biologically and to contribute something to the wider world. The instrument instructs girls to make two types of checks: first, to check the paragraph which describes them as they think they *really* are; and second, to check the paragraph which describes them as they would like to be *ideally*. The boys were asked to check the description most like the kind of wife they would prefer (both really and ideally).

The Humanitarian-Altruism Scale is included in the Feminine Dimension because humanitarianism traditionally has been seen in our society as a feminine value. Women, more than men, appear to have strong feelings of compassion for their fellow men. For example, on the social scale of the A-V-L the mean scores for college girls are much higher than the mean scores for college boys. However, it was a purpose of the present study to suggest to the gifted boys that compassion is a quality needed by all human beings and is characteristic of those most advanced in an ethical and moral sense and thus should not be considered exclusively feminine. The program was intended to support both the girls and the humanistically-inclined boys in their views, to help them value their altruistic and humanitarian tendencies.

The Humanitarian-Altruism Scale is composed of items that ask students whether they agree or disagree with statements presenting characteristically humanitarian-idealist or technologist-realist points of view. The statements, to a great extent, involve the making of a choice on the part of a student to commit himself (at least on paper) to taking part in various forms of social action. The test was shortened for the Phase II testing and thus these scores cannot be compared with the post-test scores obtained in Phase I. The original items were analyzed by a formula developed by Dr. Robert Ebel of Michigan State University. As a result of this analysis, the test was shortened from 101 items to 33 items.

4. Hypotheses

The following hypotheses are proposed for the Phase II testing program:

1. It is hypothesized that the experimental students would continue to be more accepting of creative values and that their attitudes and interests would continue to be closer to the "creative norm" than those of the control students. Formal measures chosen to test this hypothesis include the Originality, Complexity, Estheticism, Theoretical Orientation and Thinking Introversion scales of the Omnibus Personality Inventory; the Aesthetic and Theoretical scales of the Allport-Vernon-Lindzey Study of Values; and the American Council on Education's Critical Thinking Test, Form G. The informal measures chosen include the Creative Intellectual Scale of the Student Interest Survey V; and the creative intellectual Student Profile Check.

2. It is further hypothesized that the experimental

students will continue to be more accepting of creative and productive life styles in women (including high level careers); that the experimental girls will continue to choose more self-actualizing life styles; and that the experimental boys will choose the self-actualizing style for their wives more often than will the control. In addition, it is hypothesized that the experimental group will continue to show a greater degree of social concern than the control group. These hypotheses will be tested by the Acceptance of Women Scale, the Self-Actualization in Women instrument, and the Humanitarian-Altruism Scale.

5. Interview Schedules

Two interview schedules were devised. The first schedule, used in the summer of 1963, approximately a half year after the completion of the experimental program, is an adaptation of a schedule developed by Gough and MacKinnon for the IPAR assessment studies. We made changes, both additions and deletions, based on understandings we had gained in a decade of research with able adolescents. Inasmuch as our frame of reference was similar to that in the IPAR study, we decided that it was appropriate for our first interviews to follow this pattern. The schedule elicited information about the respondent's early childhood and elementary school experiences; junior high school and adolescent experiences; and their interests, opinions and attitudes.

The second schedule, used for the interviews which were conducted in the summer of 1964, was of a somewhat different nature. At this time we were less interested in biographical information and more concerned with what might be called life style, philosophical outlook and the broad grouping of tendencies we have characterized as self-actualizing. In other words, the questions related less to past experience and more to present thought and behavior and to projections into the future. The sections of the interview schedule included self-awareness and awareness of others, aesthetic and cultural interests, thinking style, social concern and views on education.

Both schedules were pre-tested with able adolescents who were not in the population included in the interview study. In this preliminary use of the questions, we determined whether or not they were easily understood by the students, whether the interpretation seemed to be similar from student to student, and whether they were of a relatively open and non-leading nature. Whenever necessary we revised the wording of questions.

Due to the idiomatic approach of the interview, our assessment will necessarily be somewhat impressionistic. In the interviews we try to go beyond knowledge which can be had with ease but is so often trivial--for example, test scores--to more vital and personal kinds of information. We ask:

> What is the student's expanding image of self, his evolving self-concept?
>
> How does he see the world? And how does he find his way in it?
>
> In what open, venturesome and original ways does he look at life?
>
> How does he demonstrate a hunger to know and to comprehend his environment?
>
> How does he respond to beauty?
>
> How does he exhibit social concern?
>
> How is he showing direction and purpose?

Through these probings we touched upon daydreams, styles of thinking, school and leisure-time activities, philosophies of life, past experiences and future projections, views on education and on life in general, the kinds of people liked and disliked, fears, moods and aspirations. Our effort is to understand how the patterns of students' memories of yesterday help them anticipate the future.

We feel that what each individual resolves, what he wills, and what he hopes for will be of great importance in shaping his life. We believe that the cosmologies that these students are fashioning inside their heads will not only shape their lives but will also help determine the kind of world in which they and their fellow men will live.

Informal instruments and information about the formal tests can be found in Report II, THE CREATIVE STYLE IN GIFTED ADOLESCENTS.

IV. METHOD: SETTING AND POPULATION
DESIGN AND INSTRUMENTATION

1. Statistics supplied by John Thalen, Michigan State University Professor Emeritus of Sociology and Demographer in the Institute for Community Development.

2. John L. O'Donnell et al., Economic and Population Base Study of the Lansing Tri-County Area: An Interindustry Relations Analysis (East Lansing, Michigan: Bureau of Business and Economic Research, College of Business and Public Service, Michigan State University), Library of Congress Catalog No. 60-62883.

3. Sidney L. Pressey, "Concerning the Nature and Nurture of Genius," The Scientific Monthly, V. 81, Sept., 1955, pp. 123-29.

4. O'Donnell et al., op. cit.

5. Elizabeth Monroe Drews, Student Abilities, Grouping Patterns, and Classroom Interaction; Final Report of the Cooperative Research Program, 608, U.S. Office of Education, "The Effect of Homogeneous and Heterogeneous Ability Grouping in Ninth Grade English Classes with Slow, Average and Superior Students" (East Lansing: College of Education, Michigan State University, 1963).

6. Statistics supplied by John Thalen, op. cit.

7. Drews, op. cit.

8. The Lansing - East Lansing area has approximately 200 churches, several active and thriving little theater groups which present both contemporary plays and classical drama, and a large civic center in the city of Lansing which not only has a wide variety of ongoing programs but also attracts numerous conventions to the city. The Lansing park system is reputed to be among the finest in the country. There are some 63 parks in the Greater Lansing area, including a zoo, an arboretum, specimen gardens, and 46 scheduled summer playgrounds. There are also 74 baseball diamonds, two outdoor swimming pools, ten indoor pools and seven public golf courses. The Y.M.C.A. and the Y.W.C.A. offer a number of programs for both adults and young persons. The school system in Lansing provides a wide variety of evening courses which allow any interested citizen (except teenagers) to take subjects ranging from pottery making to "great books" for a minimal fee. At the heart of the city is a fine new public library operated by the public schools, and nearby is the Michigan State University Library and the Michigan Historical Museum. The State Capitol itself and other public

buildings are near the city center. On the Michigan State University campus five miles away there are extensive historical and natural science displays in attractive museums.

Art exhibits are always available and there is a new art museum in the Kresge Art Center located on the University campus. In the area there are nine motion picture theaters, including several that exhibit foreign films. There are five radio and three television stations (including an educational TV station) in the area, and the city of Lansing supports a symphony orchestra. In addition, the University offers a large number of theater, lecture and concert events; and during the year some of the most outstanding ballet, opera, and theater groups in the world appear. Educational opportunities are not limited to the University; there is also a large community college and a business university.

9. Hughes Mearns, *Creative Power: The Education of Youth in the Creative Arts* (New York: Dover Publications, Inc., 1958).

10. Drews, *op. cit*.

11. *Ibid*.

12. Milton Rokeach, *The Open and Closed Mind: Investigations into the Nature of Belief Systems and Personality Systems* (New York: Basic Books, Inc., 1960), p. 183.

13. Gordon W. Allport, Philip E. Vernon, and Gardner Lindzey, *Study of Values: A Scale for Measuring the Dominant Interests in Personality* (Boston: Houghton-Mifflin Co., 1960), p. 3.

14. W. L. Warner *et al*., *Social Class in America* (Chicago: Science Research Association, 1949).

V. RESULTS AND DISCUSSION: PHASE II TESTING

The findings of the experimental program reported in the study titled, Being and Becoming: A Cosmic Approach to Counseling and Curriculum, indicated that attitudes of the experimental group were significantly different at post-testing from those of the control group on a number of the instruments that were used to measure the creative intellectual style and the feminine dimension. These differences were uniformly in the direction hypothesized and thus could be taken to indicate greater valuation of learning, openness to psychological growth and acceptance and concern for other human beings* on the part of the experimental students. The two groups were randomly selected from a parent population and there were significant differences at pre-testing on only two of the twenty-one scales of instruments used. A number of the formal tests had several scales. The tests and/or the scales were chosen because in previous research** they effectively differentiated creative from studious and social leader adolescents. Our informal instruments were designed to probe for creative-intellectual qualities and, in certain cases, to distinguish the types.

At post-testing, the total experimental group scored significantly higher than the controls on seven scales and/or instruments. The direction of change, in each case, was toward greater valuation of creative and intellectual qualities. On the Omnibus Personality Inventory the experimentals were significantly higher on Originality, Thinking Introversion (philosophical orientation) and Theoretical Orientation, and on the Allport-Vernon-Lindzey Study of Values, they were higher on the ACE Critical Thinking Test, Form G, the Creative Intellectual scale of Student Interest Survey V, and checked more creative intellectual reasons for choice of a future occupation on the Reasons for Occupational Choice scale. The experimental girls followed a pattern similar to that established by the total group, but the change which was noted on the feminine dimension for the total group was even more pronounced for these girls. On the OPI the experimental girls were significantly higher than control girls on Thinking Introversion, Theoretical Orientation and Estheticism; on the A-V-L they were higher on the Aesthetic scale; they showed more critical thinking aptitude, scored higher on the Creative Intellectual Scale, Student Interest Survey V and checked more creative intellectual reasons on the Reasons for Occupational Choice scale. The experimental girls scored significantly higher on the Acceptance of Women Scale and on both the "Ideal" and "Real" choices of the Self-Actualization in Women instrument than did the control girls. They were also higher on the Humanitarian-Altruism scale.

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*This "acceptance and concern for other human beings" is designated as the feminine dimension and includes two scales on the acceptance of self-actualization in girls as well as the Humanitarian-Altruism Scale.

**THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS: Motivation to Learn: Attitudes, Interests, and Values, Report I in a series of three: Final Report of the Cooperative Research Program, E-2, U.S. Office of Education, "A Study of Non-Intellectual Factors in Superior, (Average, and Slow) High School Students" (East Lansing: College of Education, Michigan State University, 1964).

The experimental boys tested significantly higher than controls on post-test results on the ACE Critical Thinking Test, Form G, the Theoretical Scale of the A-V-L, the Creative Intellectual scale of Student Interest Survey V, the Creative Intellectual Student Profile Check and the "Real" choice on the Self-Actualization in Women instrument.

All instruments used in the original study (Phase I) except for the Rokeach Dogmatism Scale and Rigidity Scale were repeated in the Phase II testing the year following the end of the experiment.

A. Creative Intellectual Values

1. Formal Measures

Omnibus Personality Inventory (Table 1): On the Phase II testing, there were no statistically significant differences between the experimental and control groups for boys, girls or totals on this instrument.

Experimentals were slightly higher on most scales than they had been at post-testing and were generally higher than controls (this was true of the girls on all scales). Although this is an instrument on which students are supposed to test progressively higher as they proceed in school, both experimental and control groups tested near the college mean* on all scales and both were considerably higher than the college mean on complexity. In comparison to a tenth grade group of comparable ability in the 1960-61 school year, this group (tested in the 1963-64 school year) was much higher on Originality, Complexity, Estheticism and Thinking Introversion--the four scales which were used in both studies (scales that could be compared).** It is apparent from examination of Phase II results that the experimental and control groups have become a somewhat distinctive adolescent population inasmuch as both groups score one standard deviation above the college mean on Complexity and at the college mean on the four other scales (considerably higher than might be expected of high school sophomores).

Allport-Vernon-Lindzey Study of Values (Table 2): On Phase II testing the total experimental group scored significantly higher than the control group on the Theoretical scale. This difference was at a higher level of confidence (.01) than was true of the difference (.05) found at post-testing. While the students' scores were not significantly

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*The standard score for the college population is 50.

**See appendix for Table A followed by a discussion in which a comparison of these two groups is made.

TABLE 1

MEAN SCORES ON THE OMNIBUS PERSONALITY INVENTORY FOR BOYS, GIRLS AND TOTALS IN THE EXPERIMENTAL AND CONTROL CLASSES

	Pre-Test[a]		Post-Test[a]		Phase II[a]	
	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
BOYS						
Originality	45.93	44.06	47.60	45.87	49.57	49.18
Complexity	52.52	51.79	55.05	54.43	56.51	58.00
Estheticism	41.41	41.34	40.02	40.63	45.08	47.14
Theoretical Orientation	50.16	48.36	50.78	48.59	53.54	52.00
Thinking Introversion	45.59	43.79	46.62	44.33	48.78	48.43
GIRLS						
Originality	46.49	45.21	49.25	47.03	49.59	47.53
Complexity	52.62	52.32	54.56	52.29	56.07	55.33
Estheticism	47.28	46.21	50.63*	47.33	54.66	53.42
Theoretical Orientation	45.70	43.14	46.97*	42.98	46.95	44.60
Thinking Introversion	46.95	45.08	49.98*	45.86	51.18	49.36
TOTALS						
Originality	46.22	44.73	48.47*	46.55	49.58	48.16
Complexity	54.57	52.10	54.80	53.17	56.27	56.36
Estheticism	44.42	44.19	45.58	44.58	50.28	51.01
Theoretical Orientation	47.87*	45.31	48.78*	45.29	49.96	47.44
Thinking Introversion	46.29	44.54	48.39*	45.23	50.09	49.00

[a] Pre-test differences were tested with a two-tailed *t*. A one-tailed *t* was used to measure post-test differences and Phase II differences.

*Indicates significances at least at the .05 confidence level between adjacent means.

TABLE 2

MEAN SCORES ON THE ALLPORT-VERNON-LINDZEY STUDY OF VALUES FOR BOYS, GIRLS AND TOTALS IN EXPERIMENTAL AND CONTROL CLASSES

	Pre-Test[a]		Post-Test[a]		Phase II[a]	
	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
BOYS						
Theoretical	45.86	45.38	48.38*	45.21	48.03	45.40
Economic	43.73	43.15	44.07	43.15	42.94	43.34
Aesthetic	32.02	33.43	33.25	34.40	34.40	34.78
Social	33.79*	37.64	32.25*	36.00	32.62*	35.54
Political	43.70	42.49	44.48	44.04	43.34	44.54
Religious	39.77	38.04	37.77	37.21	37.57	36.40
GIRLS						
Theoretical	39.15	38.08	38.31	36.46	38.60*	36.64
Economic	38.07	38.61	35.72	37.65	35.74	37.64
Aesthetic	37.48	36.89	40.85*	37.53	40.13	40.53
Social	42.30	42.36	42.86	43.51	41.30	42.10
Political	39.64	40.50	39.98	41.26	38.91	40.94
Religious	42.95	43.00	42.83	43.59	43.07	42.19
TOTALS						
Theoretical	42.36	41.12	42.97*	40.03	42.97**	39.86
Economic	40.78	40.50	39.59	39.90	38.92	39.74
Aesthetic	34.86	35.45	37.33	36.25	37.66	38.42
Social	38.22*	40.40	37.95*	40.44	37.47	39.69
Political	41.58	41.50	42.12	42.42	40.86	42.26
Religious	41.43	40.94	40.49	46.98	40.64	40.06

[a] Pre-test differences were tested with a two-tailed _t_. A one-tailed _t_ was used to measure post-test differences and Phase II differences.

*Indicates significances at least at the .05 confidence level between adjacent means.

**Indicates significant differences at the .01 confidence level.

influenced on the Aesthetic scale, they did continue to rise somewhat. Controls also increased on the Aesthetic scale, and even more so than had the experimental group.

Certain trends are noteworthy from pre-testing to Phase II testing. With each successive test administration, scores for both the total experimental and control groups declined on the Economic and Social scales, the drop being more marked for the experimental than for the control population. Both groups went up on the Aesthetic scale. But while the experimentals increased on the Theoretical scale from pre-test to post-test, the scores of the controls declined each time the test was given.

American Council on Education Critical Thinking Test, Form G (Table 3): There were no statistically significant differences on Phase II test results between experimental and control groups for boys, girls or totals. All groups--boys and girls, experimentals and controls--were higher than they had been at pre-testing. From post-test to Phase II testing, however, there was a drop in scores among the experimental boys.

TABLE 3

MEAN SCORES ON THE TEST FOR CRITICAL THINKING FOR BOYS, GIRLS AND TOTALS IN EXPERIMENTAL AND CONTROL CLASSES

	Pre-Test[a]		Post-Test[a]		Phase II[a]	
	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
BOYS	27.48	26.14	32.00*	29.42	29.57	30.57
GIRLS	28.03	27.73	32.97*	31.05	32.61	31.86
TOTALS	27.78	27.07	32.51	30.48	31.25	31.36

[a] Pre-test differences were tested with a two-tailed t. A one-tailed t was used to measure post-test differences and Phase II differences.

*Indicates significances at least at the .05 confidence level.

2. Informal Measures

Student Interest Survey V (Table 4): Girls from the experimental group at Phase II testing scored significantly higher on the Creative Intellectual scale of the SIS than did controls. The experimental population--boys, girls and totals--were significantly lower on the Social Leader scale than the control group. The gains of the experimental group on the Creative Intellectual scale continued to increase and were higher than the controls, and fewer were oriented toward the Social Leader and Studious scales. Controls also shifted in the direction of the Creative Intellectual scale and decreased on the Studious scale, but while the scores of the experimental group had declined on the Social Leader scale, the controls increased. Among the girls, both experimentals and controls went up slightly on the Studious scale from their scores at post-testing.

Reasons for Occupation Choice (Table 5): On Phase II testing there were no significant differences between the experimental and control groups, although students in the experimental program (both boys and girls taken separately, as well as totals) did choose creative intellectual reasons for occupational choice on the ROC more often than did control students. More control students chose social leader reasons than did experimentals.

Student Profile Check (Table 6): On the Phase II tests significantly more girls in the experimental group chose the creative intellectual profile on the Student Profile Check than they had on the post-test, this change being accompanied by a significant decrease in the number of experimental and control students who classified themselves as social leaders. At pre-testing almost two-thirds of the experimental population had checked studious, about one-fourth picked creative intellectual, and the rest chose social leader. In contrast, in Phase II only about half of the experimental sample chose the studious category,

TABLE 4

MEAN SCORES ON THE STUDENT INTEREST SURVEY V SCALES FOR BOYS, GIRLS AND TOTALS IN EXPERIMENTAL AND CONTROL CLASSES

	Pre-Test[a]		Post-Test[a]		Phase II	
	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
BOYS						
Creative Intellectual Scale	49.48	48.32	54.41*	49.40	55.41	54.26
Studious Scale	50.39	50.23	47.70	48.38	46.47	44.70
Social Leader Scale	49.82	52.00	50.66	52.00	50.38*	54.33
GIRLS						
Creative Intellectual Scale	52.74	50.44	58.56*	54.56	59.81*	55.21
Studious Scale	53.08	52.05	46.84	47.58	47.53	48.30
Social Leader Scale	47.75*	51.05	47.84*	51.70	46.04*	50.98
TOTALS						
Creative Intellectual Scale	51.18	49.56	56.63*	52.42	57.87	54.84
Studious Scale	51.79	51.29	47.24	47.91	47.07	46.91
Social Leader Scale	48.74*	51.44	49.16*	51.82	47.95*	52.27

[a] Pre- and post-test differences between experimental and control groups were tested by the Mann-Whitney U Test (sometimes known as Wilcoxin).

*Indicates significant differences at least at the .05 confidence level.

TABLE 5

DISTRIBUTION OF THE THREE MOST IMPORTANT CHOICES FOR EXPERIMENTAL AND CONTROL CLASSES ON REASONS FOR OCCUPATIONAL CHOICE ACCORDING TO CREATIVE INTELLECTUAL, SOCIAL LEADER, AND STUDIOUS REASONS

	Pre-Test		Post-Test		Phase II	
	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
BOYS						
Creative Intellectual Reasons	59	62	77	56	53	31
Social Leader Reasons	52	30	37	36	15	22
Studious Reasons	57	52	54	52	34	27
GIRLS						
Creative Intellectual Reasons	82	78	107*	89	69	63
Social Leader Reasons	36	46	22	43	19	22
Studious Reasons	80	74	69	66	55	56
TOTALS						
Creative Intellectual Reasons	141	140	184*	145	122	94
Social Leader Reasons	88	76	59	79	34	44
Studious Reasons	137	126	123	118	89	83

*Indicates a significant difference (p.$<$ .05 tested by chi square) between experimental and control classes on the creative intellectual reasons chosen and social leader reasons chosen.

TABLE 6

PERCENTAGES FOR STUDENT PROFILE CHECK ACCORDING TO STUDIOUS, CREATIVE INTELLECTUAL, AND SOCIAL LEADER CATEGORIES

	Pre-Test			Post-Test			Phase II		
	S[a]	CI[a]	SL[a]	S	CI	SL	S	CI	SL
BOYS									
Experimental	69[b]	19[b]	12[b]	55[b]	34[b]	11[b]	55	33	12
Control	60[b]	32[b]	8[b]	55[b]	23[b]	22[b]	52	32	16
GIRLS									
Experimental	62	29	9	54	28	18	52	38	10
Control	67	18	15	50	42	18	52	36	12
TOTALS									
Experimental	65	26	10	55	30	15	53	36	11
Control	64	22	12	52	28	20	52	35	13

[a] "S" = studious, "CI" = creative intellectual, "SL" = social leader.

[b] Results of chi square and exact probability analysis of profile shifts from pre to post:

1. Experimental boys shifted to creative intellectual significantly more often than to studious or social leader (grouped together) as compared with control boys ($p < .05$).
2. Experimental boys shifted to creative intellectual significantly more often than to social leader as compared with control boys ($p < .005$).
3. Experimental boys shifted from studious to creative intellectual significantly more often than from studious to social leader as compared with control boys ($p < .009$).

nearly forty per cent chose creative intellectual, and only ten per cent selected social leaders. Despite this marked change, there were no significant differences between experimental and control groups.

From pre-test to post-test the experimental boys had shifted to the creative intellectual profile significantly more often than to the studious or social leader profiles (grouped together) as compared with the control boys. This shift was especially significant in contrasting the changes to creative intellectual with the changes to social leader ($p < .005$). By the time of Phase II testing, however, enough control boys had also shifted to the creative intellectual profile that this difference between experimental and control boys was no longer significant. Similarly, no significant differences existed between the experimental and control girls or between the two groups taken as a whole.

B. The Feminine Dimension

Acceptance of Women Scale (Table 7): The girls from the experimental group scored significantly higher than controls on the Acceptance of Women Scale. The girls' scores had continued to increase between that time and when tested again during Phase II; the differences between experimentals and controls still remained significant ($p < .01$). However, there was never a significant difference between experimental and control boys on this measure; in fact, when the Phase II tests were given, the control boys had increased enough so that the scores of the two groups were nearly equivalent on the Acceptance of Women Scale. Since the distribution of boys' and girls' scores was so different (the test seemed to have a different meaning for the two groups) it was not felt desirable to combine these scores. Thus no totals are given.

TABLE 7

MEANS FOR THE ACCEPTANCE OF WOMEN SCALE

	Post-Test		Phase II	
	Exp.	Cont.	Exp.	Cont.
Boys	21.66	20.74	21.30	21.68
Girls	26.90*	24.28	27.51*	25.29

*$p < .01$ as determined by the Mann-Whitney U Test (sometimes known as Wilcoxin).

Self-Actualization in Women (Table 8): When the girls were asked to pick a description most like themselves on the post-test, significantly more in the experimental than in the control group preferred Level 3 to either Level 1 or 2 for both "Real" and "Ideal" choices. By Phase II testing, however, this difference was only significant for "Ideal" choices. In both experimental and control groups the girls chose Level 3 far more often than did the boys (both "Real" and "Ideal" choices). Among the boys, there were no significant differences between experimentals and controls on the Phase II test, although on the post-test experimentals chose Level 3 for their "Real" choices significantly more often than the control boys.

Humanitarian-Altruism Scale (Table 9): There were no significant differences between the experimental and control groups for boys, girls or totals. However, as was apparent at the time of post-testing, the girls scored markedly higher than the boys in both experimental and control groups.

TABLE 8

DISTRIBUTION OF CHOICES ON THE SELF-ACTUALIZATION IN WOMEN

	Post-Test						Phase II					
	Real			Ideal			Real			Ideal		
	1[a]	2	3	1	2	3	1	2	3	1	2	3
BOYS												
Experimental	7	34	12	7	34	12	13	16	6	15	12	7
Control	16	25	4	15	23	8	8	14	4	10	14	2
	(p< .02)*											
GIRLS												
Experimental	2	28	32	2	21	39	6	18	22	6	10	29
Control	7	33	21	13	31	18	5	27	13	6	20	17
	(p< .05)*			(p< .0005)*						(p< .05)*		

[a] Level: 1) No college; 2) Some college; 3) College or beyond.

*Indicates significance at least at the .05 confidence level as determined by chi square.

TABLE 9

MEAN SCORES ON HUMANITARIAN-ALTRUISM SCALE FOR STUDENTS IN EXPERIMENTAL AND CONTROL CLASSES (Phase II Testing)

	Experimental	Control
Boys	18.43	18.36
Girls	24.04	23.89
Totals	21.77	21.58

[a] Differences were determined by the Mann-Whitney U Test (sometimes known as Wilcoxin).

C. Implications of the Results on Formal Measures--The Creative Intellectual Style

Despite a clearly discernible trend for the experimental group to become more creative and intellectual in their attitudes, interests and values, the results of the Omnibus Personality Inventory (OPI) and the Allport-Vernon-Lindzey Study of Values (A-V-L) indicate that they were no longer testing significantly higher than control students, as had been hypothesized, on most scales a year after the experiment was completed. The OPI and A-V-L scores of the control students, whose attitudes and interests had previously been further from the "creative norm," had risen so pronouncedly that at the time of Phase II testing they were only slightly different from the experimentals. While the experimental group remained significantly higher than the controls on the Theoretical Orientation scale of the A-V-L and tested slightly higher than the control group on certain OPI scales, generally speaking, the differences were minimal. In the examination of the results on these two formal instruments we begin to see a pattern that is reflected throughout. The superior population involved in the study had become markedly different than other tenth grade groups in creative and intellectual characteristics--the motivation to learn and openness to psychological growth. An "expansion of consciousness" apparently had occurred in a relatively short time that was of the proportions of a module of growth that usually does not occur in less than five or six years. In other words, young adolescents (age 14-16) had reached levels of psychological maturity not found on the average before college (age 18-20). This growth mainly occurred in the experimental group in the ninth grade (age 14-15) and in the control group in the year following (age 15-16) the experiment.

Although a predisposition to the creative intellectual style, as measured on one standardized instrument--the OPI, increased markedly for experimentals during the experiment and showed large increases for the controls in the year after the study was completed, the same was not true with critical thinking skills (measured on the ACE Critical Thinking Test, Form G). Scores on this problem solving test were approximately the same at Phase II testing as they had been at post-testing. In other words, there seemed to be a definite and continuing change in attitudes for all groups--boys and girls, experimentals and controls--but no apparent increase in problem solving skills after the experiment was over. It is our feeling that the school supports neither these attitudes, interests and values, nor does it supply training in logic and seminar-type discussions that would enhance critical thinking. The question we must explore is why the valuing of the creative intellectual style by the students not only continued but increased.

D. Implications of the Results on Informal Measures--The Creative Intellectual Style

As was noted above, the increase in creative intellectuality was also reflected on informal instruments. Attitude change was apparent on two informal instruments, Reasons for Occupational Choice (ROC), and the Student Profile Check (SPC); and changes in interests and behaviors were apparent on the Student Interest Survey V (SIS V) scales.

Creative intellectual growth for experimental boys was reflected by the fact that at Phase II testing (tenth grade), they gave three and a half times as many creative intellectual (CI) as social leader (SL) reasons for occupational choice.* This was in contrast to their post-testing (ninth grade) choices at which time they chose twice as many CI as SL reasons. The ratio of CI to SL reasons for occupational choice for the control boys remained about the same at Phase II testing as it had been at post-testing. Although at Phase II experimental boys chose 53 and controls chose 31 CI reasons, these differences were not significant. Throughout, it can be seen that the experimentals increased rather than lessened their predisposition toward creative intellectuality in the year that elapsed after the experiment.

Creative intellectual trends for the total population from post-testing to Phase II testing also were reflected by large increases in the percentage of CI checks on the part of control boys and experimental girls on the Student Profile Check. At post-testing 23 per cent of the control boys described themselves as creative intellectuals while 32 per cent made this choice in Phase II testing. Similarly, the experimental girls moved from 28 per cent of post-testing to 38 per cent at Phase II testing choosing the CI type. Experimental boys remained essentially as they had been--with 34 per cent describing themselves as CI at post-testing and 33 per cent making this choice in Phase II. Control girls chose the CI self-description slightly more often at

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*They chose as CI reasons for occupational choice the following: 1) Work allows new discoveries, is creative; 2) Would put me in the front lines intellectually--handling new ideas or art forms, tackling crucial issues; 3) Presents a challenge--even though there may never be any answer to the final problem; rather than SL reasons for occupational choice: 1) Work offers high pay, 2) It carries a high social prestige, 3) It offers an acceptable position in our society.

Phase II (36%) than at post-testing (32%). In nearly all instances the increase in CI choices was reflected by a decrease in SL choices. Approximately as many students saw themselves as studious in Phase II as in post-testing. In the tenth grade about one-third of each group in the total population chose the CI self-description but there were only slight differences between experimentals and controls. The girls made this choice somewhat more often than did the boys. If we can judge from self-images, the motivation toward learning and the openness toward psychological growth was far more pronounced in this group of able tenth graders than we had any reason to expect. Among an equivalent group* in the same schools in 1961 approximately one-fifth had described themselves as creative intellectuals.

As we have seen, attitudes toward learning, self-images and even critical thinking skills were remarkably similar for experimentals and controls at the time of the tenth grade testing. However, the two groups were distinguished in one way--by actual behavior. If attitude change is a step toward behavior change, then the controls were moving but the experimentals were a step ahead. For the total group, the trend was for the experimentals to report more CI and fewer SL interests and behaviors on the _SIS V_ than did the controls. However, the experimental boys were not significantly higher than control boys on the _CI_ scale at Phase II. The control boys showed large gains on the _CI_ scale of the _SIS V_ between the ninth and tenth grades and, strangely enough, exhibited some gain on the _SL_ scale. The control boys remained significantly higher than the experimental boys on the _SL_ scale in Phase II. As with the _Reasons for Occupational Choice_ instrument on which control boys chose far more SL reasons than did the experimentals we see the controls taking what they may consider a more practical stand in an anti-intellectual society.

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*The 1961 group was more able (average IQ) than the 1964 students (average IQ), a fact that should have precipitated more CI choices among the students in 1961. See Report I, "Motivation to Learn," for tables showing percentage of choice.

The experimental girls showed greater CI and less SL interests and behaviors than any other group. This same trend was apparent for these girls on ROC and SPC. They remained significantly higher than control girls on the CI scale. However, the change on the CI scale for both experimental and control girls was small, but the direction of change was toward creative intellectuality. The control girls' mean score on the SL scale dropped slightly from the ninth to the tenth grade as did the mean SL score for the experimental girls; however, the control girls remained significantly higher than their experimental counterparts. All groups, judging from the SIS V results, became more creative intellectual in their interests and behaviors but the total group of experimentals who had devoted their experimental class time to wide reading and various aesthetic experiences in the ninth grade* remained higher than the controls on the CI scale and were significantly lower on the SL scale.

These results would suggest that not only did school interests continue to change in creative intellectual directions for the experimental students, but in addition, the out-of-school and leisure time interests and activities of this group continued to move toward this orientation. As we have seen, the control group showed a similar pattern of growth--perhaps more marked in attitude than in actual behavior change. Thus it seems that while the controls have been indirectly influenced (as indicated by the fact that there was only one formal scale, A-V-L Theoretical Orientation, in which experimentals were significantly higher than controls), the experimentals were still apparently differentiated from controls by their interests and behavior, at least as indicated by the Student Interest Survey V. There were also strong trends to show that the experimental boys would take opportunities for creative intellectual expression into account far more often than would control boys when asked to choose an occupation. However, both experimentals and controls described themselves as CI about equally often.

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*The control class studied career pamphlets, commercially prepared career films and textbooks. Each student prepared a paper giving the advantages and disadvantages of a single occupation that he was considering for a possible future vocation.

Perhaps indirect exposure is sufficient to change attitudes and beliefs, but more direct means (for example, a special program) help students to change their behavior. It may be that behaviors such as reading habits are not as easily developed as the willingness to think about new ideas. If one is to make reading, listening to music, visiting museums and participating in intellectual discussions a focus of one's life it will mean sacrificing other activities. In other words, we might speculate that quite often new modes of action can or will be undertaken only after such involvement has been explicitly allowed or encouraged and only after the student has worked out a life style which gives time for and permits such expressions.

As we have seen, on all measures utilized in our study the creative intellectual style remained the predominant direction of change for experimentals and became that for controls. However, the growth rate of the experimental group during the year following the course was less than it had been during the experiment. Perhaps this modest increase might be expected to follow a growth spurt, or it may reflect the lack of support given to CI values in typical high schools. In all probability, a program of a more intensive and comprehensive nature extended over a longer period of time would help to maintain a more accelerated growth pattern.

Our previous findings (post-test results) have demonstrated that an experimental treatment apparently can influence student motivation to learn and openness to psychological growth--especially in the areas of theoretical orientation, aestheticism, originality and thinking introversion (philosophical introspection). Thus we concluded that attitudes toward learning can change and that there are probably a variety of ways to encourage the development of an affinity for original thought, theoretical conceptualization, contemplative and philosophical inclination and aesthetic awareness. We also found that aspiration (as reflected by reasons for occupational choice), self-images and interests and behaviors can change. However, students must encounter and be excited by ideas, attitudes and behaviors of a self-actualizing nature before they can make them their own.* This contact probably can be made by meeting--in books, films or in person--attractive men and women who have thought long and seriously about important problems and who remain zestful, optimistic, idealistic and buoyant, who are deeply moved by beauty and can communicate their feelings. Students too rarely come into direct contact with vividness, greatness or commitment. However, it would appear that such opportunities, particularly if they are frequent and continue over a period of time, will change motivational patterns and will foster the creative intellectual style in able adolescents.

Such changes in the school environment will perhaps encourage the unsure, give support to the neo-creatives and supply a haven and nourishment for those in whom the CI style already flourishes. In an anti-intellectual, profit-oriented, tough-minded society, tenderness and the higher level intellectual talents will not develop without special nurture. The need is for an evocative atmosphere, esteem and companionship. With those students in whom the creative intellectual style is better established, we have noted in our previous studies (see Reports I and II) that the desire for special educational provisions is particularly strong and is coupled by a marked resistance to run-of-the-mill school programs. It may well be that the usual school may almost force such students into patterns of low achievement, withdrawal or rebellion--in a very real sense school can contribute to their alienation. At least in our limited population of students who were strongly autonomous, intellectually honest and forthright, diverse in their interests and aesthetically sensitive, we found this to be true.

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*Unfortunately students are far more apt to meet and be influenced by exciting ideas and attitudes reflecting our society's taste for cruelty, dishonesty and immorality, so commonly purveyed via the media.

While it could be argued that the changes produced by a course like the one given to our experimental students will necessarily be short-lived unless the predominant themes are continually emphasized in further course work, the scores of the experimental group did not regress at the end of the program, as would have occurred if this were true. Instead, as we have seen, the students continued to exhibit more characteristics of the creative intellectual style. It may well be that the CI adolescent sub-culture (one that is certainly little understood) is a potent force and if growth is once triggered in that direction, the culture can itself maintain considerable but probably highly selective momentum. Due to the experimental program, or for other reasons, the total population seemed to have become an unusual group of high school sophomores; both experimentals and controls were more oriented toward creative intellectual values than is typical for their age. In fact, their scores on the OPI and A-V-L more closely resembled those of college students at the freshman or sophomore level than scores of other able tenth graders.

As these results are reviewed it seems important to ask the following questions:

1. Was this trend toward an increase in creative intellectual values (now apparent in our entire population) of sufficient proportions to be noteworthy?

2. Could these results be explained on the basis of national or regional trends of a similar nature? Was there--in addition to a growing concern among youth for getting good grades and getting into college--a marked increase in motivation to learn independently and a greater openness to psychological growth?
3. What other explanations might be offered for the changes?

To answer the first question a comparison was made between OPI scores of able tenth graders in this 1964 study and those of an equally able group tested in 1961.* This 1961 group had no exposure, either direct or indirect, to our experimental curriculum. The results from this statistical comparison of OPI scores are shown and discussed in the Appendix. It is clear from this comparison that the 1964 group was significantly more inclined toward creative intellectualism than was the 1961 population. In other words, the change was of noteworthy proportions--our population which had been exposed both directly and indirectly to creative intellectual values was unlike other sophomores of the same ability who had attended the same high schools but studied the usual curriculum. Could it be that the early 1960's were a time of such intellectual ferment (either nationally or locally) that high school students were affected? Was the well-documented trend toward competition for grades and college admission accompanied by a new penchant for intellectual autonomy and creative expression?

In trying to explain why these results may have occurred, the principal investigator contacted Dr. Paul Heist from the research staff of the Center for the Study of Higher

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*In both 1961 and 1964 able tenth grade students were studied. Both years the population was chosen from all three Lansing high schools and every student who could be discovered with an IQ above 120 was used in the comparison.

Education at Berkeley, to find out whether he would attribute these higher scores to any nationwide trends within the past three years which would have caused young people to adopt more willingly the creative intellectual style. Dr. Heist replied that in none of the studies conducted by the Center had they observed such changes during the same period (1961-1964) and that he could think of no events which should have caused such changes in the Lansing locale, either.

Our search for explanations took another direction at this point. It might be that the continued creative intellectual growth as well as the lack of differences between experimental and control groups in the Phase II testing was at least partially due to interaction among the entire superior population (i.e., that some of the effects of the experimental curriculum spread from the experimental students to the controls), as well as the general readiness of and eagerness of able adolescents for such ideas. Perhaps, as Emerson contended, "the spirit of poetry lives in every human heart" and it is particularly near the surface and ready to be called forth in the adolescent. It seems likely that the ideas which had been the focus of the experimental course later became topics of discussion among many of the experimental students and their friends, and thus contributed to an expansion of the creative intellectual adolescent sub-culture. Because the themes from the course could have been very much in the air throughout the school, they could have influenced those who had had only indirect exposure to the course.

E. The Aesthetic and Social Dimensions: Sex Stereotypes and Social Sanctions

In the preceding discussion of the creative intellectual style the major emphasis was placed on attitudes, interests, values and behaviors which can broadly be described as related to motivation to learn and openness to psychological growth. Although the assumption of intellectualism and creativity, learner autonomy and originality, complexity of approach and range of pursuits makes such characteristics somewhat unacceptable in the typical American high school milieu, they have been characteristically valued by outstanding American scholars and scientists and--in a very general way--accepted by the public at large* as approved routes to achievement. It is our conclusion that two other dimensions of the creative intellectual style--the aesthetic and the social--are much less valued by Americans. The aesthetic will be considered first, and later, the social.

The artists, would-be artists, and their followers generally feel more alienated from society than do scientists. Henry Murray speaks of "a paralysis of the creative imagination" that comes from a lack of "a kindling and heartening mythology to feel, think, live and write by."[1] Not only do artists feel an animus toward their society but the social order returns their resentment. The general public is apt to consider artists as "un-American" due to their trenchant criticisms of technological advances and their penchant for inwardness and romanticism.

The six case studies in the next chapter, Chapter VI, illustrate the problems encountered by the young who are developing as creative intellectuals, artists and humanitarians. At the outset, contrasts are drawn between two students (one a social leader and one a studious type) who demonstrate generally acceptable patterns of growth as far as the school and society are concerned and two others (one a scientist-scholar and one a romantic rebel) who find little to encourage or foster their character development or intellectual growth in the high schools. Science and scholarship with their emphasis on theoretical and critical thought are typically male emphases and when the scientist-scholar role is taken by a girl, as in the case study we will present, she may eventually suffer from many conflicts. Similarly, the boy who is a romantic rebel is at odds with the general culture. He is regarded as too involved and too threatening and yet too unmasculine by an aggressive, success-oriented society. So we see that not only do the anti-intellectual attitudes in our society work against the emergence and growth of talent in such outsiders but also that there is, in addition, another burden placed on the aesthetically-oriented boy and the girl with a scientific and theoretical mind, who flout society's sex role mandates. He is not properly male; she is not properly female.*

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*There is always an acknowledgment of the value of the accomplishments of Nobel prize winners despite the fact that in any individual case scientists and scholars may feel misunderstood. As has been pointed out before (particularly in Chapter III), the young scholar or scientist may find a lack of responsiveness and challenge in the public school.

We see that the creative intellectual style, when either the cognitive or the affective-aesthetic dimension is emphasized, finds scant acceptance and when sex roles are reversed it becomes anathema. Counter pressure against self-actualization of the individual is an endemic social disease--in eternal conflict with the urge that the healthy organism has to become fully human. Thus it comes as no surprise that social creativity is held to be an even more dangerous mode of expression than the two other forms. To be creative is often interpreted as thinking in new and divergent ways and being productive. Newness is extolled, but the impact of new products on the social order is rarely examined. Parents buy machine guns for their children's Christmas--if machine guns are offered for sale on the toy counter. Yet, as we have seen, not all change is welcomed. Few seem to agree with Gardner when he holds that "the ideal of individual fulfillment within a framework of moral purpose must become our deepest concern, our national preoccupation, our passion, our obsession."[2] It is all too apparent that social change and its would-be perpetrators do not receive the all-American welcome that technological advances do. The life histories of Margaret Sanger and Bertrand Russell--complete with jail sentences--document this. And the students who carry signs with the exhortation "make love, not war" and who urge that a loving universe replace a brutal and bureaucratic one meet with strong resistance.

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*Such pressures may well account for the fact that the boys in our study scored somewhat lower than the girls on thinking introversion and much lower on aestheticism while the girls scored lower than the boys on theoretical orientation.

It is not action alone that can provoke criticism. Even social concern must go hand in hand with social sanction. The fear seems to be that such concern may give way to the individual impulse that is apt to father a creative, altruistic act. Thus the humanitarian-at-heart encounters disregard and disdain. In the hard-headed and hard-hitting world of business and technology, unregimented expressions of altruism and compassion are considered superfluous, unrealistic and--what is worse--childish and feminine. Tenderness is relegated to the nursery and the ladies auxiliary.

F. Implications of the Results on Informal Measures: The Feminine Dimension

Throughout the study, both on post-testing and on Phase II, girls have shown a greater inclination to change than boys. Perhaps this speaks to the malleability of girls or it may reflect a greater readiness on their part to accept the creative intellectual style. Certain aspects of the style undoubtedly have strong appeal for girls. Girls tend to value aesthetic experience and expression and thus may readily show growth of this nature if given encouragement. Similarly, girls are apparently somewhat more inclined toward thinking introversion (philosophical thought) than are boys. Marked changes in the experimental girls were apparent in these two areas. At post-testing they were significantly higher than control girls on both the Esthetic and Thinking Introversion scales of the OPI and on the Aesthetic scale of the A-V-L when Phase II tests were administered; the experimental girls remained higher than the controls on the two OPI scales but not significantly so. The control girls showed remarkable growth spurts on these two scales (.6 growth between 1963 and 1964 on the Esthetic scale and .4 on the Thinking Introversion scale and also they increased .3 on the Aesthetic scale of the A-V-L in the year following the experiment). The girls in this tenth grade population seem to have become more sensitive to beauty, intuitive in thought patterns, and discriminatingly eager to participate in the aesthetic culture.

Not only did we see changes in aesthetic receptivity and responsiveness but also a continuation of strong humanitarian-altruistic concerns among the girls. (Changes between post- and Phase II testing could not be documented on the Humanitarian-Altruism Scale since a revised form of the instrument was used in Phase II.) In post-testing the experimental girls scored significantly higher (239.4 vs. 232.3) than the controls--but both groups of girls tested far higher than the boys whose total scores were 204 and 205 on the post-test H-A Scale. On Phase II testing, using the revised H-A Scale, the two groups of girls tested about the same but received scores approximately one-third higher than those received by the boys. The girls seem to agree with many of our most respected and wisest philosophers and scientists that sympathy, tenderness and generosity are infinitely more practical than greed and cruelty. They want to relate themselves wholeheartedly to others.

Perhaps the most marked difference between experimental and control girls--and a most dramatic difference between boys and girls--is the valuing of self-actualization in women. Experimental girls continued to show significantly greater valuation of women than did controls on the Acceptance of Women Scale* and both experimentals and controls showed moderate increases in Phase II over post-testing. In the tenth grade (Phase II) both groups of girls tested much higher than the boys, e.g., the experimental girls tested almost 30 per cent higher than the experimental boys on the Acceptance of Women Scale.

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*The Acceptance of Women Scale, Self-Actualization in Women and the Humanitarian-Altruism Scale were instruments we developed for Report II.

These same trends were more dramatically apparent on the Self-Actualization in Women instrument. On this instrument the question posed was not simply one of a general acceptance of women in career roles and other self-actualizing activities but was, instead, a very personal question asked of each individual: Which, among the three alternatives or levels offered, was the best self-description, first on a Real, then on an Ideal basis? More experimental than control girls chose Level 3, the highest or self-actualization level, as both the preferred Real and Ideal self-description. At Phase II almost twice as many experimental girls chose Level 3 as chose Levels 1 and 2 combined as an Ideal self-image. This was a greater proportion of Level 3 choices (as Ideal) than had been the case for experimental girls at post-testing. It began to look as if this group of girls was not planning to retreat into the feminine mystique but rather that they hoped to live full and exciting lives in the larger world.

The control girls were certainly interested in personal self-actualization but somewhat less so than their experimental counterparts. The control girls made fifty per cent more choices of their Ideal self-image at Level 1 (the anti-intellectual, non-achievement oriented "female female") and at Level 2 (the conforming college girl with no great urge to achieve, to do graduate work, or to develop and sustain a personal style).

Both experimental and control boys seemed generally negative to self-actualizing growth for women at large or for their wives in particular. Few chose Level 3 as either Real or Ideal for a future wife. For example, four times as many experimental girls as experimental boys indicated that Level 3 was Ideal--the girls speaking for themselves, the boys for a future wife. The trend in the control group was similar with many control girls wanting self-actualization for themselves and only a few control boys who seemed to find these qualities desirable in a future wife.

Our study shows that girls are eager to become more creative, particularly in the ways that Abraham Maslow calls feminine creativeness. The girls seem to agree with Maslow's statement that this feminine pattern of creativity "is important because it gets less involved in products, less involved in achievement, more involved in the process itself." The case studies in Chapter VI include those of two girls, one a neo-creative and the other a more fully developed humanitarian-altruist, who demonstrate the emergence--during the adolescent years--of this pattern of creativity.

It seems quite apparent that girls are willing to take social responsibility and also are eager to realize their own best potential. Thus, although May[3] (p. 56, Existence) is probably right when he says that modern human beings have lost their sense of community, the girls would like it to be otherwise. The girls in our tenth grade population with high H-A Scale scores and also strong interests in personal self-actualization may some day fit a statement that Maslow made in describing self-actualizing people as "the most altruistic and social and loving of all human beings."

It has been noted that the young are particularly sensitive to and have a strong sense of the breadth and diversity that the future offers to those who are open to it. Girls, with their intuitive power and sensitivity, seem to be drawn toward these far horizons. They respond well to a humanized education--a new pattern which is not only appropriate for the future but which fits their attitudes, interests and values as well. This may explain the fact that our program (which placed particular stress on the natural, aesthetic and human worlds) seemed to have great appeal for the girls. The films portrayed socially concerned, feminine women (all with strong aesthetic interests) who had transgressed into the male-dominated pursuits of law, research, radiology and politics (the latter via song). In response, the experimental girls became significantly higher than the controls in theoretical orientation and in critical thinking as well as in the more aesthetic and intuitive attitudes, interests and values. Beyond this growth in intellectual and aesthetic creativity, there were two other kinds of growth apparent--one a valuing of humanitarian-altruistic concerns and activities and the other an acceptance of and valuing of self-actualization in other women and in themselves. This growth motivation in the girls proved to be the most lasting effect of our program. They want a personal and concrete involvement in the world as well as a vital sense of self.

G. Summary

As social needs for leadership and creative talent expand beyond local and national limits to the world at large, all able individuals, girls included, must contribute. They must recognize as William Lloyd Garrison did: "My country is the world. My countrymen are all mankind." And, fully as important as the needs of society, is the need of each individual to become a mature and zestful adult. From our study we have concluded that able youth show an eagerness and talent for self-actualization. They are responsive to heroic models, to moving ideas and to opportunities for philosophical discussion. Beyond this they seem to have great talent for thinking creatively about their lives. The need is for an accepting and evocative environment. Unfortunately, we must face the fact that schools rarely offer guidance which concerns itself with self-actualization and the needs for intellectual, aesthetic and social expression of talented youth. The society at large is similarly negligent in this respect. As Margaret Mead has observed, "We have not created, even on a pilot experimental basis, the type of social organization capable of finding, recruiting, educating and providing for the innovative intelligence we need."[4] Our society and the educational establishment must take its mandate seriously and help each young person become the best possible version of himself, help each to find a unifying philosophy of life, and, finally, help each to participate rationally and humanely in civilization.

V. RESULTS AND DISCUSSION: PHASE II TESTING

1. Henry A. Murray, "A Mythology for Grownups," Saturday Review, January 23, 1960, p. 10.

2. John W. Gardner, Excellence: Can We Be Equal and Excellent Too? (New York: Harper and Brothers, 1961).

3. Rollo May, Ernest Angel, and Henri F. Ellenberger (eds.), Existence, A New Dimension in Psychiatry and Psychology (New York: Basic Books Publishing Co., Inc., 1958).

4. Margaret Mead, Continuities in Cultural Evolution (New Haven: Yale University Press, 1964), p. 247.

VI. CASE HISTORIES: A STUDY OF LIFE STYLES

In this report we have selected a particular location on the promontory from which to view and try to understand the intellectual, creative and ethical dimensions of college-bound youth. Our selection of these dimensions has been directly affected by our view of the nature of man and also of the characteristics of youth. We take the stand that the maximum possible development of intellectual and creative talents is more desirable than the squandering of ability. Further, we hold that in the development of excellence some directions of growth are more desirable than others. Thus we wholeheartedly endorse Gardner's statement:

> Learning for learning's sake isn't enough. Thieves learn cunning, and slaves learn submissiveness. We may learn things that constrict our vision and warp our judgment. We wish to foster fulfillment within the framework of rational and moral strivings which have characterized man at his best.[1]

The propositions which follow constitute our theoretical frame of reference and are assumptions about able adolescents which we hold to be both valid and relevant:

A. Each individual is different from every other; since these differences are desirable, they should be understood and fostered. As growth continues, this differentiation increases to such an extent that the most highly developed individuals are characterized by a high degree of inner unity as well as great complexity. In other words, individuals become both more multifaceted and more integrated within themselves as they grow older and become more intelligent and better educated.[2]

B. Each individual has central traits and a personal style which can best be known by observing and studying his total life pattern. We assume, agreeing with Allport, that the study of human development--finding out what students are really like--will be most valid and complete if it is done "individually, in terms of personal dispositions."[3] Despite the complexity of each individual and the inadequacy of present approaches to the problem, we assume that individuals studied as whole human beings are at least "partly or approximately knowable" beyond the level of common sense.[4]

C. The mind and personality contain unfathomed possibilities, the limits of which are still unknown. Maslow notes that self-actualization is a "widespread kind of creativeness which is the universal heritage of every human being that is born."[5]

D. Each individual uses only a small part of his potential. Maslow, in defining self-actualization, states that "any person in any of the peak experiences takes on temporarily many of the characteristics . . . found in self-actualizing individuals, that is, for the time they become self-actualizing."[6]

E. To the extent that the individual uses his potential, he becomes self-actualizing. We are using the term to refer to a pattern of growth described by many "third force" psychologists, particularly Maslow. Lindner speaks of this as the free development of individuals "according to their own potential or design."[7]

F. As an individual becomes self-actualized, his mental health increases. In other words, his particular abilities must be recognized, developed and used if he is to be psychologically healthy. The healthy individual will choose to do the new and the difficult (growth choices). As Maslow says, "Only he can afford to be bold."[8]

G. The direction of growth in the healthy organism is toward self-actualization. As Maslow has said, "People with intelligence must use their intelligence, people with eyes must use their eyes. . . ."[9] "Capacities clamor to be used . . . capacities are also needs."[10] Such healthy growth progresses--from dependency in childhood to a growing independence in adolescence, and finally to dependability in adulthood.

H. Intellectual growth is blended inextricably with the growth of the total personality, resulting in an inner unity. Allport writes, "for efficient intellectual functioning (whatever the IQ), qualities of personality are needed . . . a person's pattern of intelligence is idiographic, basically unique."[11]

I. The values and purposes of the individual (that is, the development of character) are central to self-fulfillment. Nothing is learned until it becomes integrated with the individual's own life commitments.[12]

J. In healthy growth there are synergic relationships between the individual and his society. As personal dispositions and abilities develop, there will always be interaction between the organism and the environment. Gradually the individual transcends selfhood, and is more able to fuse with and respond sensitively to the world around him. Simpson notes, "Individual integration and welfare . . . may be . . . achieved and reach their highest degree, by interaction which promotes others along with self."[13]

K. The evolved and mature human being is all of a piece and functions as a unit. Intellect, personality, feelings and action can be separated conceptually, yet no one of these functions independently of the others. We accept the existential view that we must take the individual "whole as a unique being-in-his-world."[14]

L. If self-actualization is accepted as a desirable direction of growth there are ways that this can be fostered by education for self-awareness. Maslow points out that "Self-knowledge seems to be the major path to self-improvement, though not the only one."[15]

Although the ultimate reality of what a human being thinks of himself and his world is always hidden from both the individual and the observer, Maslow and others have presented us with qualities which the more creative and self-actualizing individuals are held to have in common.* It is our view that an awareness and a comprehension of these qualities in the adult may help us to understand as well as identify such patterns in the potentially creative adolescent. The following qualities are reported as representative of creative development in the adult: the

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*Among the "third force" psychologists are G. Allport, C. Bühler, E. Fromm, K. Goldstein, A. Maslow, R. May, G. Murphy and C. Rogers.

contemplative mind--theoretical orientation; the *open mind*--democratic character structure; the *inquiring mind*--an ability to formulate multiple hypotheses and an eagerness to understand the world; the *humane sentiments*--including an acceptance of self, others and nature; the *independent stance*--resistance to acculturation and conformity pressures; the *aesthetic orientation*--comprising both appreciative and expressive patterns of response; and a *sense of destiny*--goal-orientation and purpose.

Our own efforts to understand healthy growth have been concerned with a particular pattern which we call the creative intellectual style. Our first investigation of this orientation was a study of attitudes, interests and values in 400 able adolescents. This research dealt with three abstracted types--the creative intellectual, the studious and the social leader, each one approximating an ideal. Each of these orientations is valued by certain segments of the larger society. The public at large and school people, in particular, value social adjustment (measured by popularity and leadership) and studious academic effort (the kind which results in good grades). In contrast, philosophers, scientists and artists tend to value other commitments--intellectual, ethical and creative. But as Gardner says, "Unfortunately we have virtually no tradition [in the schools] of helping the individual achieve such commitment[s]."[16] Furthermore, we understand little about how growth motivation and a sense of direction and purpose can best be fostered inasmuch as psychologists have rarely studied such patterns of development. Thus it is our view that we must make every effort to explore this problem in depth. We are in agreement with Peck and Havighurst that this higher level of development " . . . deserves and requires a great deal more precise definition and more detailed, systematic study."[17]

Although we do not propose a rigidly defined construct, we do suggest that a hierarchical model is appropriate to show the relationship among the three types.* In terms of levels on an ascending scale of personal maturity we see the social leader as least developed, the studious as being on middle ground, and the creative intellectual as most mature.** The social leaders represent the kind of immaturity endemic among American adolescents; they are perhaps most typical of the "adolescent society" which Coleman[19] has studied. In other words, they are pleasure-seeking as well as power-oriented. They approximate aspects of the character typologies which Peck and Havighurst have termed Amoral, Expedient and Conforming.[20]

We have found the studious to be more mature than social leaders in their interpersonal relations--they do not exploit others knowingly and they are helpful without expecting immediate personal reward. However, they have not as yet gone beyond expressions of conscience and idealism to independence of thought and action, and many are still at the conforming level. They rarely make decisions based upon personally derived values. Instead, they bend to parent and teacher demand, are eager to please and feel pangs of guilt when they do not. Understandably, the adults in their life sphere generally approve of the studious and their typical attitudes and behaviors, but simple dependence upon such approval may prevent further autonomous and integrative growth. In many ways this group fits the Irrational-Conscientious typology described by Peck and Havighurst.

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*An excellent description of hierarchical models can be found in Jane Loevinger, "The Meaning and Measurement of Ego Development," American Psychologist, March, 1966.

**Obviously there are many ways of living, some tending toward self-actualization but most not, and the effects of psychological orientation are not known to the extent that we can say that one is absolutely more desirable than another, but we are inclined to think there are orientations toward life that are decidedly superior--both for the individual and for his society. As Allport has written, "Fortunately in Western Culture there is considerable agreement on the norms for soundness, health or maturity."[18] (He uses these terms interchangeably and adds that, of course, we are talking about the ideal.)

The creative intellectuals, having adopted the attitudes of the self-actualizing adult, are at the most mature level. If we judge them by expressed attitudes, they represent the autonomous and integrated stages in Loevinger's "Milestones in Ego Development"[21] and are similar to the Rational-Altruist type, the highest level of moral maturity in the Peck and Havighurst hierarchy. Of the three types, these young people are the least accepted by the general public and by the schools. In a predicament similar to that of the adults with whom they identify, the creative intellectual adolescents often find that the larger society does not understand them. Their honest commitment to intellectual excellence and social justice must necessarily involve human betterment and change which, as Hoffer makes clear in The Ordeal of Change,[22] may sometimes be painful for the common man to accept. In addition, people feel threatened by--even jealous of--such patterns of excellence. Friedenberg makes this clear in his article, "The Gifted Student and His Enemies."[23] Thus we are apt to find a general rejection of what the creative intellectual stands for and of the individual himself--the young person who reads books beyond his years and whose penetrating and disconcerting questions deny easy answers.

Since we have accepted the creative intellectual style as the highest stage of adolescent development,* and have felt that it would be desirable to encourage personality growth and attitude change in this direction, we developed, in our second study, a special program to foster self-actualization. Our research indicates that many students will change rather readily in their attitudes and apparently move to higher levels of development when the conditions are appropriate. For this change to occur, it is mandatory that these special patterns of growth be made clear and then be encouraged. We found that during our experiment similar growth was not apparent among control students who received no special treatment, whereas the students in our experimental program became significantly more motivated to learn, more open to growth, and more dedicated to progressive change based on a social ethic. Admittedly this was a pilot effort to produce attitude change; we did not expect these effects to be great or enduring. We were gratified, however, that changes did occur and that they were of a self-actualizing nature.

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*Maslow points out that self-actualization brings with it certain built-in problems. A discussion of some of these can be found in Maslow's Toward a Psychology of Being, Chapter 8, "Some Dangers of Being-Cognition."[24]

An equally rewarding aspect of the program was that it gave us the opportunity to see the students in a new situation and a different light. As a result, we discovered depths of seriousness and openness to growth of which we had not been aware before. It is these insights, and the knowledge that our prior studies were relatively superficial, that have prompted us to search for new ways to study the gifted young person. We were determined to probe more deeply and to look more carefully at complex life influences and evolving needs, interests and value orientations. We wanted to see how able young people who express creative and intellectual attitudes live and think and plan for the future. To do this we decided to make case studies, concentrating on those aspects of the personality and life style which seem most relevant to the understanding of self-actualization in superior youth.

Many personality theorists hold that the most valid way to study the individual is to look at his life style.* The focus in our present study of able adolescents resembles the pioneer work on character development reported by Peck and Havighurst in the Psychology of Character Development. As the authors note, "In order to study and understand human beings, it is necessary to understand what is going on 'inside' the person."[25]

We have come to agree with Allport that these kinds of insights can only be reached by studying the individual and asking that he reflect upon his life pattern. Thus we decided to use depth interviews as our main assessment procedure. Allport holds that looking at personality as "a process of stylization has the merit of allowing for limitless individuality," and he contends that study of the individual supplies the only true statements about human beings.[26] Each life history, like May's definition of "being," represents the individual's unique pattern of potentialities. These "potentialities will be partly shared with other individuals but will in every case form a unique pattern for this particular person."[27] The style-of-life study which we have chosen as a modus operandi is also in the tradition of the work that Maslow did in his research on the self-actualizing adult; that which Murray and White had in mind in their work which was termed "a study of lives";[28] and that which MacKinnon's current assessment studies represent.[29]

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*As we mentioned earlier, we had come, in the course of working out our two preceding studies, to certain kinds of insights about personality development--particularly as it relates to the creative intellectual style. However, we did not believe that we could communicate adequately the many ways that students express this style through tables and statistical averages. Grouped data always partially conceal the personal distinctiveness of an individual whereas the case history is by definition idiomatic.

Case Histories:

The three "ideal" types, our focus in Report I, provide the framework for the six case studies which are to be presented in the present report. However, the approach taken in this study is very different from our earlier research, where the comparison of types was based on statistical averages. The data with which we will now deal are descriptive in nature, a study of lives in order to add nuances and depth to the distinctive features of each type.

It must be kept in mind that these types are generalized and idealized categories. The concept of the "ideal type" is a convenient fiction--a sort of Platonic ideal--yet it is a useful conceptual tool. Each type represents a group; no individual case is, in all respects, like the ideal. Fortunately, in our search for students to represent the types, we began with 127 able young people from our experimental population--a group of sufficient size to allow latitude in selection. Initial screening gave us 39 creative intellectuals. We also chose three representatives each from the social leader and studious categories. It was this group of 45 which we interviewed and from which, by careful study of the interview typescripts of records made by observers, and of personal documents, we were able to narrow our selection to six typical representatives.* In other words, we made our final choices of the six students who were to represent the types by the refinement of successive approximations.

The studious and social leaders are illustrated by one case each while four variations of the creative intellectual style are presented. The case histories have thus become representative types, with only the minimum of fictionalization required to disguise the individuals' identity. The thought patterns and the language used are the students' own. As we sought to understand these young people we were struck by the relationship of each of these types within the adolescent subculture to adult types within the North American culture. For clarification, in the introduction of each case history we make generalizations as to the importance of the type as illustrative of a motivational emphasis in the larger society. In other words, a social context is provided and the adult prototype of the adolescent is described.

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*By allowing students to classify themselves, i.e., choose the most appropriate of the self-descriptions, we had been able to validate the hypothesis that these three categories of young people were different from one another in their attitudes, interests and values. (Report I.)

Although this study favors the democratic-humanistic value system of the creative intellectuals, we try to make it clear that each of the three types represents a kind of excellence valued by its prototypal sector in American society. In addition, each type is distinguishable in specific adult patterns of achievement. For the social leader and the studious, these guidelines are highly visible through adult role models who embody the same patterns of behaving and believing. The creative intellectuals are less apt to meet "significant others"--models such as mature artists, scientists, philosophers, humanitarians or scholars.* The society molds the student, and the student, through his predispositions, responds to and interacts with the shaping forces of culture. Members of the three groups come to focus on different ends as well as different means. One individual chooses one pattern of values and a particular achievement drive while another--perhaps even his twin brother*--chooses another way to live his life. Each defines situations differently and each begins to develop a distinctive identity, reflecting personal needs and values. Students become known and know themselves by their dreams and by their aspirations. Adolescents begin to develop a style--a way of working and of thinking, and to set their directions for the school years and most probably for life: the studious strives to achieve in academic terms; the social leader works toward becoming an influential in adolescent society; and the creative intellectual bids for excellence in the world of ideas--in the arts and/or the sciences. As Presthus asserts, "There is a well-known relationship between our values and the kinds of work we undertake."[30] We can add that these shape both our immediate and future roles in society.

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*Although the young creative intellectuals have generally not met adults whose style of life and thought is similar to their own, most are aware of such patterns of life through their reading.

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*We do not know why a similar environment might affect two young people in radically different ways but it is clear that the "fire which melts the butter can harden the egg."

> The England of today . . . was producing a new race of mankind, over-conscious in the money and social and political side, on the spontaneous, intuition side dead.
>
> D. H. Lawrence
> Lady Chatterley's Lover

The Social Leader Prototype:

As an adolescent the social leader has already assumed many of the values of his adult exemplar, the entrepreneur. The latter is a well-marked type and a frequently admired man in modern American society.* He symbolizes success in terms of money and power, and, as Kardiner has said, today's world lauds this pattern: individual competitive success is to modern man what salvation was to man during the Middle Ages.[31] He is, above all, practical--oriented to people and things rather than ideas.

This image of the pragmatist, more Roman than Greek, undoubtedly provides a model for the young social leader. It is a model that has high visibility. There are clear guidelines written at the "how to succeed without seeming to try" level. The attitudes and behavior style desirable for this stance were described long before Adam Smith commented on the economic motive (Wealth of Nations, 1776)[32] or Spranger (Types of Men, early 1900's)[33] postulated that the drives to acquire material things and to want interpersonal power were two universally held values. The Romans extolled the virtues of the activist Caesar, and his accounts of his exploits have unquestionably influenced countless generals and administrators throughout the ages.

In the early 1500's Machiavelli[34] stated the social leader value system in phrases that have remained etched in men's minds for centuries. In Machiavellian terms, the entrepreneurial pattern of achievement is multi-faceted and includes: reaching for understandings about the foibles of men and playing upon these rather than changing them; gaining insights into the society for the purpose of controlling it rather than improving it; acting in hypocritical ways, e.g., apparently accepting virtue while avoiding its practice.

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*America, as George Santayana once wrote, is the "unalloyed essence" of modern society. It is, as we are told daily, a rich, hedonistic society at or near the zenith of its political importance in the world.

The individual who hopes to wield such power knows full well that the route to the top is through organizational channels. He must accept the value system uncritically. In America this includes adopting such preoccupations as speed, the exploitation of land, technological mastery--all to the extent of being willing to transform nature into a total artifact. He does not stop to ask why he wants this. He simply stands for progress which for him is in terms of the triumphs of the machine and an ever-accelerating national income. As Paul Goodman has said, "Americans no longer live in this country. They occupy it like a conquering army."

Those who accept such values and who adopt obedience, manipulative personal relations and opportunistic behavior as their norm and who can become committed, as well, to such organizational goals as unlimited growth and power, are apt to succeed if they have moderate ability and boundless energy. This energy must, of course, be focused on immediate, not ultimate, ends: the future will take care of itself. Americans, in general, tend toward these values (The Acquisitive Society,[35] The Organizational Society,[36] The Status Seeker,[37] The Achieving Society,[38] The Affluent Society[39]), and are often, as well, non-reflective and anti-intellectual (Anti-Intellectualism in American Society[40]). Their tendency to value power and action has been noted by the most perceptive of social historians, including the

French scholar, de Tocqueville, in 1830,*[41] and the American historian, Parrington, in the early 20th century.[42] The special talent is to lead the unexamined life as if it were the good life.

Such values and the accompanying behaviors have generally been held in low esteem, across cultures and throughout the ages, by social philosophers. These individuals who study and speculate on the good life and the higher orders of human development rarely have found such qualities in those who focus on power and money. Plato held that the philosopher-king was the ideal; the Jewish and Chinese people described a beautiful person as one who embodied intellectual and ethical virtues; and present-day "third force" psychologists typically place contemplation and self-realization highest on a scale of personality development. We have accepted this position and thus hold that the creative intellectual is most mature and that the social leader is the least developed of the three types of able adolescents. As a relatively immature person, the social leader typically does not concern himself with such higher values as responsibility and the meaning of life. He does not attempt to grow toward integrity or to develop what Aldous Huxley held to be a civilized mind: "comprehension without loss of comprehensiveness."[43]

By accepting expediency and compromise, the social leader hopes to make his way to the top and to be rewarded with power, prestige and money. He is dedicated to the proposition that the quest for personal wealth, personal power and personal pleasure is the ultimate explanation of human behavior. Thus he expects others to be cynical, grasping and unprincipled for, as Sullivan has pointed out, an individual's perception of others, i.e., his evaluation of their motives, is largely a function of his own personality.[44] The achievement of success has thus become associated with aggressive striving, tough-mindedness, extraversion and practicality. The complex state of mind which demands the weighing of alternatives and the examination of conscience is dismissed as something soft and fuzzy; and contemplation is held to be unrealistic and a waste of time. Lip service is given to individualism, but the route ahead is clearly marked as one that demands acquiescence to authority and obeisance to convention. Individualism can only be interpreted as looking out for oneself.

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*"I know of no country in which there is so little independence of mind and real freedom of discussion as in America."

Accepting things as he thinks they are, the social leader works out a scheme of action within this framework. Since he typically delegates work, talent can be minimal--"It's not what you know but who you know." On a superficial level he is sociable and convivial, but this tendency is held to be dangerous if it moves to such lengths as "brotherly love." Optimism is voiced in "all is well with the world" terms and hearty "chin up" manner, but there is beneath all this a basic cynicism about men as individuals and a deep pessimism about the improvability of man. People are to be used, not trusted; they are things, not free and sensitive individuals.

Rosenberg reports that adult males of this persuasion often fall within such classifications as the "aggressive personality type" who "respects only the powerful and the successful."[45] They are often seen as authoritarians--conservative, hostile to labor, endorsing war as a policy, intolerant of minority groups.[46] They tend to go into business, finance and public relations, and to rank at the bottom of all occupational groups in "faith in people."[47]

Holding such views, the social leader can become a salesman-executive or a Madison Avenue molder-of-opinion, willing or even eager to manipulate by any means. Mass media reach the crowds and crass and materialistic motives will be best accepted if they are imbedded in the most sacred of sacraments. Thus wedding bells are juxtaposed with detergents in radio and television ads, while at the time of death sophisticated attempts are made to convince the grieving that their "Loved Ones" must of necessity rest in luxury. The end, usually pecuniary rewards for the individual or the company, justifies any means. Free speech can become the license for invading the privacy of others. Certain personal "rights" must be fiercely preserved, but obligations are to be taken lightly. Friendships and even church memberships can be used for economic ends. The social leader is the master of the "constructive" friendship.

In an unselected teenage population we have found that almost two-thirds choose the social leader description as the one (of the three types) that they feel best approximates an accurate self-description. In the school years, there is less aggressiveness and competitive hostility shown--school is not where the rewards are and thus time spent there can be well used to learn to "get along with" and "to influence" classmates and teachers. Although adolescents are sometimes given a poor press and are held to be irresponsible, money-oriented, status-seeking and hedonistic, and not properly responsive to adult-made rules and regulations, there is every reason to believe that when such attitudes and behaviors are witnessed they exemplify the emulation of mass culture rather than some special depravity of youth. If anything, the young person is more honest, more intellectually searching, and more socially concerned than is true of those who are middle-aged.*

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*James Symington, "Youth, Crime, and the Great Society," Reporter, February 24, 1966, pp. 41-43, recently said, "We talk about excellence and the pursuit of excellence. But how many adult Americans are growing breathless in the pursuit of excellence?" He continues, "We permit

We have noted that the social leader often tries to influence the teachers as well as his classmates. However, for most of this group, adolescence is the time for the teenage in-group. Parents and teachers are only tolerated for what they have to offer or because they are authority figures. Not more than a fifth of the intellectually superior students (who generally read and often like to learn) feel this type is a valid self-description. Most bright young people identify with adults and enjoy talking to them.

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our children to be spectators of vice and hate every day. To forbid it would be attacked as deprivation of some constitutional right on the part of the purveyors of vice and hate. Worse than that, it would require self-discipline on our part."[48]

Mark Steel--Social Leader

Description and Family Background: Mark Steel is a very typical example of the social leader type of student.* He is a popular, extroverted and rather handsome boy with reddish-brown hair, freckles and brown eyes. His build is rather slight, but it is an athletic build, and his movements are well-coordinated. He has a healthy complexion and he takes great pains to appear well-groomed; for, as everybody knows, it is only the well-groomed man who is accepted socially. Mark also plays the guitar at times but, again, only as a means for popularity and acceptance. He does not value the artistic effects of music or song and, in fact, regards these effects as important only to "longhairs" and "squares." Artistic creation of any kind for itself is a waste of time.

Mark is an intelligent boy, but is not in the least impressed with his intellectual capacities. He does, of course, employ them in his schoolwork, but only to make the "drag" of school easier: that is, lighten the burden. He wants very much to live a successful life: "I want to be some kind of executive, a big man in business where I can make a lot of money and have plenty of leisure time." He dreams of motorboats and would like to own a yacht some day. During the interview Mark was at times impish and at other times impertinent. He did not take the interview questions seriously, and his answers were largely superficial. He also proved himself to be a poor listener. He was concerned rather with leading the conversation, which usually focussed (when he was in charge) on sports or specific people or the "in" things to do. Mark adheres strictly to adolescent norms, and admires the typical values of his crowd. He feels that this kind of conformity will be the most direct route to the top, and that complex and independent thought takes you on unnecessary detours. Therefore, he wants everything to have a pattern or symmetry. He admires movie stars for their wealth and social position, and secretly dreams of himself in the midst of them. In the everyday world, Mark feels that he is popular and that he has many friends: "I've got a lot of friends. Why shouldn't I? I worked for them and they're good friends. We do everything together."

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*Mark and his twin brother, John, were both interviewed in this study. John qualified as a creative intellectual. Some of the insights about the parents come from John's remarks.

Mark's father is a quiet but good-natured (and rather sensitive) man. He attended a professional school for two years, and is now a conservation officer in Michigan. Perhaps because he is a reserved man he may easily be thought of as remote and unfriendly, but Mark describes him as a likable person. He is highly regarded within his own circle of friends for his neat, unassuming demeanor, and even humility. In regard to his family, he handles none of the disciplinary measures, but he often takes Mark hunting. Because of this, there is a certain affinity between Mark and his father.

Mrs. Steel is seen by her sons as rather the opposite of her husband. She is outgoing and friendly, having a definite and genuine fondness for others. She laughs easily and heartily, and has the singular talent for making guests feel at home. Robust and pleasant, she is the acknowledged leader of her circle of friends for her ability to keep the conversation flowing and her love for entertaining. Mark reported that she is an excellent cook and takes deep pleasure in seeing her family well-nourished and contented. He admires these qualities in her and does not seem to mind that she is also the disciplinarian of the household. Despite this role as the primary authority figure in the family, the boys both feel closer to her than to their father.

John describes her well when he says that she is the "stalwart" of the family. Though Mark often resents the discipline, he does realize and understand her role in the family.

Mark and John have two older sisters. The sisters, twenty-nine and twenty-six years of age, are both college graduates with teaching certificates. They taught school for a few years, then married, and are now devoted mothers and wives--having given up teaching. Mark's twin, John, stands out in vivid contrast to the rest of the family. He is an extremely good-looking boy, very quiet and introverted. Not popular with the crowd like Mark, he shares his friendship with those who are interested in learning, reading, aesthetics, and other intellectual pursuits. His poetry and essays have already won for him recognition as a young man of considerable talent and maturity, but he receives such praise with unassuming modesty. John is often the recipient of much scorn from Mark, who finds nothing worthwhile in his "impracticality." "My brother, John, is a phony," he says, "who is wasting his time. He'll never get anywhere if he keeps this up. . . . He hardly has any friends, and everybody at school mocks him to me. Sometimes it's kind of embarrassing." Because they have little in common, Mark and John seldom associate with each other. Each goes his own way and finds life fruitful according to his specific value system.

Despite the personality differences in the family, it remains close as a unit. They have always lived in the same house, and all would be rather reluctant to leave. They have travelled together to the mountains and big cities of the East and have often gone to the woods of northern Michigan and Canada, although each member retains his own interests during the trips. For instance, Mark loves to hunt and fish with his father, while John takes lonely walks through the woods, meditating. Still, there is very little strife, as if by an unspoken truce. Mr. and Mrs. Steel are both church-going Catholics and so are Mark and John, although Mark has become rather indifferent and John thoughtfully liberal. Mark says that, "Really, I don't think church is all that important. It's stupid, though, to sit around like my brother does and try to discuss how it might be improved when all you do is get people mad. Church is still part of life--why should you ask so many questions?"

Mark is a young man with a purpose, and in order to reach his position he is willing to use any expediency or compromise: "It really doesn't make any difference how I get there, as long as I do." He believes that the end justifies the means, and indicates that most wealthy and influential men got that way by having a goal and then employing all means available to reach it. "Remember," he said, "it's the really big men--I mean the wealthy ones--who run this nation. The guy who just sits back and thinks all the time is just one of the masses. They are lost and don't count. John won't believe me, but it's true----." He spares no time for the philosophical problems of our time, such as values, human existence or ethics. "Life is meaningful only if you live it right, and I think I'm doing it," he said.

Mark is especially fond of recalling the time when his sisters--then high school cheerleaders--would take him to ball games as team mascot and he would have "the time of my life." The older girls definitely preferred the extroverted Mark to the quiet John. Mark reflects often on the fun he has had in the past, and hopes that life will continue to be good to him as long as he is deserving.

Psychological Assessment: By his school performance, Mark would be considered a slightly above average student who usually maintains a "B-" grade point average. According to his reports on the Student Interest Survey V, he studies very little. He checks that he is above average in intelligence, but he also indicates that he does not really care to use this ability academically--except when it "helps him get pretty good grades without much work." The several aptitude and ability tests which he has been given seem to indicate that his capabilities are somewhat greater than his past school achievements show. On the California Reading Comprehension Test* given in the ninth grade, for example, Mark's vocabulary score was equal to that of college freshmen and his comprehension score was equivalent to that of high school seniors. An IQ of 123 on the verbal scale of the California Test of Mental Maturity places him at the mean of our superior experimental population. However, on two other measures, the Differential Aptitude Test given in the ninth and the National Merit Scholarship Qualifying Test from the eleventh grade, his scores were relatively lower. On both tests he scored at about the 70th percentile based on an unselected population for his age group. His ability (or perhaps his willingness) to think logically as measured by the American Council of Education, Critical Thinking Test, Form G, was no better than that of average students. His three scores on this test were at or near 20, at least 10 points below the group mean of the experimental population.

Mark's choice of self-description on the Student Profile Check for each of the three testing periods (1962-1964) indicated that he considered himself a social leader. None of the evidence which we obtained contradicted this self-evaluation. However, his scores on the three instruments, the Omnibus Personality Inventory (OPI), the Allport-Vernon-Lindzey Study of Values (A-V-L) and the Student Interest Survey V (SIS), which assessed creative attitudes and inclinations, were variable. At the outset Mark was only slightly below average in these characteristics, but while the experimental group increased from pre- to post-testing on all OPI scales, Mark's scores declined significantly. He was more than one and a half standard deviations below the total group on the aesthetic scales of the OPI and the A-V-L, and approximately a standard deviation below on four other OPI scales (theoretical orientation, thinking introversion, originality and complexity) which are said to measure interest in ideas and openness to psychological growth. His scores were somewhat higher on the Phase II testing but still showed a strong inclination toward anti-intellectualism and remained lower than they had been at pre-testing. The results on the Student Interest Survey V (SIS) were similar. At the beginning of the program his score on the Social Leader Scale was higher than that which he received on the Creative Intellectual Scale or Studious Scale. During the experimental course Mark's score on the Social Leader Scale rose sharply while his scores on the Creative Intellectual Scale and the Studious Scale dropped. A year later his score on the Studious Scale was still lower and the score on the Social Leader Scale had continued to rise. His score on the Creative Intellectual Scale remained the same on Phase II testing as it had been on the post-test SIS.

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*See Chapter IV for a more detailed description of the instruments.

Mark was nearly one standard deviation below the mean for our experimental population on the Humanitarian-Altruism Scale both times the test was given. In other words, he reported himself as liking to go along with the crowd (in social leader terms) but he also indicated little tolerance for or desire to work on human problems. However, at pre-testing Mark also showed some "openness" of mind. At this time, he was slightly less dogmatic and rigid than other members of the experimental group. This situation changed dramatically during the experiment, however, so that at post-testing Mark tested high on both the Rokeach

Dogmatism Scale* and Rigidity Scale;* while scores for the group as a whole had become lower.

On both post-testing and Phase II testing Mark showed little acceptance of independent and career-minded women. In fact, his scores on the Acceptance of Women Scale** were among the lowest received by the experimental boys. On the Self-Actualization in Women inventory he chose, without exception (as his conception of both real and ideal wife, and in 1963 as well as in 1964), the Level I girl--a "strictly female female" who does not plan to go to college or develop a distinct identity.

Psychological Dimensions--The Contemplative Mind: Mark answered questions designed to evoke thoughtful commentary with a polite glibness. Nothing seemed worthy of detailed discussion except sports and social life. When asked about the importance of religion in his life, he replied, for example, "We're Catholic and we go to church every Sunday and we worship, and both my sisters went to a Catholic grade school. But anyway, religion isn't too important like it is in some families."

Mark likes to talk and enjoys it when discussions are vindictively personal and become charged with emotions. However, he finds it hard to sit through a closely reasoned statement on a theoretical dispute; at such times he usually talks to his nearest neighbor. Once he was heard to mutter, "Those guys just think they know it all." Mark was always suggesting that the class should get down to "cold facts" about a subject, although unfortunately he could supply few of these himself since he generally had not read either the assignment or the previous night's newspaper. He avoided editorials like the plague but felt that all normal people "should read the funnies and the sports page religiously."

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*On these scales lower scores indicate more open-mindedness and less dogmatic or rigid thinking when confronted by new beliefs.

**Scale items attempt to measure the degree to which an individual is accepting of women who develop intellectual and creative potential and enter high-level careers.

Mark prefers problems that are manageable and that "can be easily solved." Working for long periods of time on a theory seems pointless, especially if there is no ready application for the results. Thus he finds it hard to understand anyone who likes to sit and think. In fact, he thinks such behavior is probably a little stupid. When the film of the famous naturalist-philosopher, Loren Eiseley, was shown in his experimental class, he responded negatively: "How could a grown man want to spend his time just walking on the beach, talking to himself? He wasn't carrying a gun or doing anything!" Another time Mark commented, "If a person is used to having other people around, he won't enjoy being alone and just thinking. If I have to spend an evening alone, I either go to bed or listen to records."

The Open Mind: Mark has definite ideas about how the world is lined up. For example, he feels that "a man should know about science and politics, and a woman should know about art and music." He went on to say, "I really don't like arty people--like some of my brother's friends, for instance." Previously he had rejected much of the aesthetic world when it was presented as a part of the Four Worlds Textbook in the experimental program. Beside a poem about a magnolia tree which was included in the text, for example, he scribbled the word, "Slush!" in order to express his contempt. "Isn't it kind of stupid," he asked, "to put poetry and all sorts of art in a social studies textbook, anyway?"

Again and again Mark's speech was at the cliche level which he used as "filler" in class discussions. When the race issue was being discussed heatedly, it took no preparation or even thought for him to remark, "It will all come out in the end." Certainly Mark considered himself well on the way toward being a well-rounded, all-American, red-blooded boy, "with a slogan mentality," his interviewer added, and continued to describe Mark's speech as, "Easy, idiomatic, vigorous, and in the American free-style syntax--but to no particular purpose."

The Inquiring Mind: Mark defines a good student as one who "is active socially and well-rounded rather than one who keeps to himself all the time and keeps his nose in a book. I wouldn't want to be like that." Education, to him, is "getting the understanding of how to do things. The most valuable part of school is being around different kinds of kids. Most classes are a waste of time."

Learning for its own sake had little appeal for Mark, although he thinks he will study hard enough to get the kind of job where he can make a good living--one that would be both economically and socially rewarding. His scholastic goal, as he stated it on a questionnaire, is to "get good enough grades to land an alrite job"; the knowledge gained is not the main factor in his mind.

When asked if he liked to think, Mark replied, "Yes, if it's something I can figure out or know about. Nothing deep. I don't like to think of anything that frustrates me or where I can't find an answer. I'm just not a long hair."

Mark does not consider himself to be a reader. He says: "I don't know why. I can read quite well--that is, better than most of the other kids. I like to read if I can find something interesting and I can't take my eyes off it. But I don't like to read dull things. I just don't do much reading."

The Humane Sentiments: Mark is outgoing--in fact, very gregarious--and he values friendship, particularly on the level of acquaintance. As he once said, "I'm glad I'm not like my brother because I have about five times as many friends. And he gets along with his friends differently than I get along with mine. His are more intellectual and stuffy and mine are just friendly." This brotherly love is not extended to those he does not know personally, however. In fact, he finds little to hold his interest in contemplating the fates of the people of the Emergent Nations or the problems of slum dwellers in American cities.

Almost every student identified as a creative intellectual was concerned with major human problems, particularly over-population. Mark's only comment on this issue was made during a class discussion when he said, "I think having children comes under Private Enterprise. It just isn't anybody else's business." He is a happy-go-lucky boy who likes to dispose of serious problems with off-hand yet sometimes quite clever remarks. A major complaint is that his brother is far too serious. You might say that Mark is optimistic but this seems to be primarily because he looks at situations superficially and generally ignores the fate of mankind. When discussing the problems of segregation in class, for example, he stereotyped the dilemma and commented,

> I think things are much, much better because, just look at it--slaves a hundred years ago were treated like dirt. We just kicked them around, but look at how far they've come in just a few years. They've got their own stores. They've got their freedom, education and everything else. You've got to expect a little of this prejudice down South, I mean. After all, the Negroes were slaves for a long time.

Mark says he does not concern himself with social issues because "things will take care of themselves," and the "good guys will win out." Since he is sure that he will have no problems becoming a success, he is generally pleased with the situation as it exists. If things do not go well he simply shrugs, "That's the way the ball bounces." Planning is not necessary; besides, "it's a little un-American." And peace is probably not possible in our time, either, according to Mark. "After all, men like war," and as he says, "I enjoy carrying a gun myself." Mark feels you can't completely trust anyone even though you may have many friends. "Everyone in school will cheat if he has a chance and those who don't are just afraid they'll get caught." But friends are still valuable: "After all, it's not what you know but who you know."

The Independent Stance: Mark approves of the close relationships between the members of his family and apparently is not searching for independence, particularly of an intellectual nature. Thus he sees nothing to rebel against in the teenage social mores either. He values what the group values, and this (the group) is where his friends are. In both interviews, however, he did show signs of religious rebellion. But despite this, Mark has done little to formulate his beliefs on religion more clearly. He says,

> I go to Church every Sunday with my parents because it makes them happy and they expect me to. I can talk to one of my sisters and my father about how I feel, but they don't have any answers either. If you think all the time about your beliefs then you get too serious--like my brother. He thinks too much about everything. Besides, I'd rather have fun than get depressed....

Mark seeks a clearly prescribed pattern in everything he does. "Teachers," he asserts, "should give us the subject matter straightforward. The facts are what we need, along with specific assignments so we know exactly what we're supposed to do and don't have to waste our time trying to figure it all out on our own. Teachers usually just babble on and on, and you can't understand a thing they say. I like the ones who can tell us what they want and then who will take time out for fun." He thinks maybe schools used to be better "because kids get all mixed up trying to decide what courses to take and when they were through they knew what to do because they did the jobs they were good at."

Aesthetic Orientation: In the discussions in the experimental classes Mark showed a definite antagonism toward the whole creative dimension and the philosophical and humanistic ideals it represents. "I don't see why anybody would spend their time writing a poem or an essay just for themselves," he explained, "especially when they could be having a great time with the other guys or something. Brother!" When asked whether he liked art or music, Mark replied, "Oh, I might crack a note--if it's popular music. If someone tells me to play something I'm lost though, unless they hand me some music." Further comments seemed to reveal that the purpose of his playing was not communication, but rather a way to gain popularity and acceptance.

Poetry, Mark feels, "makes no sense" and even when it was assigned in school he often would not read it. As he puts it, "I usually can get by just reading the titles." He reads very little--"only when it is assigned or something really near when I can put my hand on it and there's nothing else to do." If he were to choose a book he would want one that was "exciting, you know, sensational." "Why do people sit around trying to figure out if a certain book is written well or in a good style?" he questioned, and added, "I just know what I like and what I don't like. What difference does it make anyway how it was done or how good it is?" However, when Mark starts a book (a very rare occurrence), he feels he has to finish it "because I just can't stand loose ends."

A Sense of Destiny: A sense of destiny is felt by those who can conceive the largeness of the stage upon which life is enacted. On this stage there might be heroes--larger and better than life--and a social order that is of the new utopian genre. However, none of this appeals to Mark. He was particularly unresponsive to the idea of models, and the ideal image. The heroes which he found most credible were James Bond and the Man from U.N.C.L.E., the anti-heroes involved with clever gimmicks and fast girls rather than thoughtfulness and sincerity. Intimations of greatness were discarded as disturbing and unnecessary.

Mark does not believe that he can personally make a worthwhile contribution to society. "Some people can. I'm not even sure they should try. Things are better usually as they are. Why meddle?" Perhaps this nonchalance toward his own involvement with the problems around him occurs because he does not want to dedicate himself to any issue and is not really interested in doing something significant or outstanding. He feels that people should stop expecting so much from him. He comments, "They generally want things I don't want--like grades and some kind of dedication to a movement."

Since self-fulfillment and personal growth are alien concerns to Mark, he will work instead for what he knows will bring him status. Success is "having a good life--a good house to live in and good neighbors and friends. Having four children, two girls and two boys, and having a close family and intelligent children. Also a job that I enjoy and am interested in." His obvious emphasis on the social aspects of life appear again when Mark was asked what he considered the ideal person: "Just having a good personality and good friends and being an all-around man."

"Stick close to your desks
and never go to sea,
And you all may be rulers
of the Queen's Navee!"

William S. Gilbert
"When I Was A Lad"
H. M. S. Pinafore

The Studious Prototype:

As an "ideal" type, the studious adolescent has moved beyond an egocentric focus on pleasure and success and has acquired a sense of social responsibility. As an adult, he may become the responsible citizen--conventionally religious and concerned about his neighbor's welfare. He is still the bedrock of American society, particularly in the Middle West. In him, the Protestant Ethic continues to flourish, and duty and obligation ornament his life. Material success is important, but it should be won honestly--by hard work and without undue deviousness. Unlike the young social leader who becomes adaptive, opportunistic and often amoral, the studious young person emerges as responsible, conventionally idealistic and quite moral. He incorporates the voiced standards of parents and teachers. He is not apt to have "idle hands," to "kill time," or to "lie around." Instead, he tries to "make the most of his time" and not "let the grass grow under his feet." In Freudian terms, from his "superego" comes the insistent voice of conscience and assorted guilt feelings.

It may well be that the restricted behavior patterns (derived from parental and social standards and injunctions) wall off the adult responsibles and their young studious counterparts from free choice and free thought. They are loathe to challenge traditional conceptions of the world and the status quo of behavior. Thus they do not learn to exercise continuous self-examination, to contemplate alternative actions, or to question eternal verities. And, due to these circumscriptions, they are not free to shape their own lives meaningfully and they contribute only modestly to furthering the human cause. Within limits, usually of the home and community, they work to advance the human condition but they do little to safeguard the human estate.

The good citizen accepts the higher virtues of kindness and freedom, and to an extent can act on these, but he is also confined. Guided as he is by conventional wisdom (as used by Galbraith) and the collective conscience (as used by Riesman), he is not free to break new pathways to self-realization and social betterment. His is more the "proverb" than the "slogan mentality." For him, tradition may not be irresistable but it is strong and may blot out depth and complexity. However, acquiescence to custom does not mean he cannot and does not usually behave rationally and charitably.

The able adolescents in this group see their route to success through academic excellence. Here is a realm respected by parents and teachers and an acceptable ladder to success. High grade point averages get the studious youth into the best colleges and it is bruited about that a good record in a good college opens many doors in the business world and in academia. The studious want to be visible in the "Great Hunt for Academic Talent" and doing what they are told to do practically insures that they will be seen. However, as adults they are more apt to be the backbone of the bureaucracy than in the seat of power, and will probably be the competent scientists rather than the innovators. And they rarely become artists or mystics. They are, instead, teachers and engineers, model citizens and pillars of the church. They often wish there was more sense of intellectual and spiritual triumph, more outright joy in their lives than they find, but they persevere and maintain a hope that the future will bring them nearer to greatness.

Stan Hough--Studious

Description and Family Background: Stan Hough is a pleasant-looking young man of medium height and sturdy physique. His hair is closely cropped and red and his face is flushed--half way between ruddy health and embarrassment--and deepened in tone by a multitude of freckles which he dislikes intensely. There is evidence of strength and health in his movements and appearance as well as in his reports of activities. These become two of his most obvious assets as he relates his various activities, including membership on the school's football team. Though he is a regular on the team, he modestly describes himself as the sort of player whom nobody notices, but who is nevertheless dependable: "I don't care about being flashy too much. All I do is try to do my job well." He lacks the healthy narcissism of many young athletes. Because of this, he is well liked but not an extremely popular team member.

Stan's modesty, as reflected during the interview, seemed genuine. Though proud of his achievements and his intelligence, he remains generally impassive and unobtrusive. He had a true concern to please; in fact, most of his responses seemed to be planned, for Stan dislikes presenting anything that appears to be ambiguous or capable of misinterpretation. He was very accommodating, usually hesitating first and then answering each question precisely. However, he did not feel free to impose his own structure of the world into the dialogue nor did he feel free to make use of the many tangents which were available. Stan tended to interpret questions literally, for precision is what he deems most important in communication, and it may be this approach that has robbed him of nearly all semblances of humor. "Oh, sometimes I joke around a little," he said. "But, really, there are other things more important."

A highly moral boy, Stan has only contempt for most of the teenage norms of behavior. He does not smoke, drink, or rely on profanity. "I swear once in a while under my breath," he said, "especially when I do something wrong--like math problems--after a lot of work. Boy, that makes me mad!" He scoffs at those who spend their evenings at drive-ins and parties. Nor does he date or attend social functions. He prefers to remain at home where he can do his homework and be near his family, whose influence he has deeply appreciated. He accepts his domestic role graciously, and looks at it with the view that it will help him ultimately to be a more responsible citizen. He reasons that, "My relationship to my family now is just like it will be to society, as a whole, so if I do what I am supposed to now--and even a little more--then I will be able to fit securely into society later on." Stan is conventionally idealistic, believing strongly in social reciprocity and the fact that all men are basically selfless, and that they go against their natures when otherwise. In general, Stan is a "no-nonsense" type of lad who is scrupulously polite and eager to please, yet possessing an almost hyperdeveloped superego and an over-concern with parental teachings.

Stan's father, Mr. Hough, is a truck driver who makes short runs in the lower part of Michigan. Although he had only a tenth grade education, he does reveal a certain latent intelligence, especially in practical matters. He is a conventional man, somewhat authoritarian, quiet and strict--very much the head of the family. Stan's voice reflects the respect he feels for his father when he says, "You know there's some freedom, but you'd better hop to it when he says something." Mr. Hough's leisure time is made enjoyable by his ham radio. He taught himself how to build, operate and repair the equipment and enjoys the sense of achievement it gives him. Because of his irregular working hours, Mr. Hough cannot often spend a great deal of time with his children, but he shares with Stan an interest in sports that enables them to play catch or watch sports on television together.

Mrs. Hough, a high school graduate, worked as a secretary until her second child was born when Stan was in the second grade. Like her husband, she is a quiet person, especially in the contact of people she does not know well. She is also a strict parent from whom Stan feels that he acquired his strong moral sense: "She always seems to know what's right and what's wrong." In addition to Stan, the Houghs have two young daughters who are eight and ten years younger than he for whom Stan feels much responsibility--a feeling which his parents have fostered and encouraged.

Stan's family is a close one and the children are expected to partake in all activities, excursions and interests. However, the intellectual and cultural interests are best described as lower middle class. There are few magazines and books in the home and Stan had received little encouragement to cultivate an interest in reading anything outside of his own schoolwork until he was enrolled in the ninth grade experimental social studies program. As far as music is concerned, the preference is for Lawrence Welk and country and western. The television assumes a large role in their evening togetherness as the children watch programs chosen by their parents (mostly comedies and westerns). The entire family enjoys sports and the outdoors, so their excursions usually involve attendance at baseball and football games, along with occasional trips to the lake or to state parks. The only art exhibit Stan has ever attended he saw on a trip to the Detroit Institute of Art in connection with the ninth grade experimental program. He rather enjoyed it and indicated that he would like to go again; however, he considered it a thing of relatively little importance and would not go out of his way to see it. His father, he said, considers such things "foolishness."

Mr. and Mrs. Hough place a great deal of emphasis on the importance of school and good grades and Stan reflects this attitude. When asked what he thought was his greatest strength, he answered, "I do as good as I can--get good marks." Neither he nor his parents consider learning as good in itself, but rather that it should be directed toward a concrete goal such as "a better job" or "making more money." The dominant motive for much of his day-to-day work is a sense of responsibility to his parents. At an age when most young people begin to rebel against their parents, Stan still unequivocally follows their direction. He thinks that adults know best and that rebellion against them is "silly." In religion, too, he accepts the Sunday School message in its most literal sense and, while he is not regular in church attendance, he uses its dogma and tradition as his guide, much as his parents do. His father is a union member and a party-line Democrat: "In 1964 it was LBJ--all the way." Despite this party affiliation, however, domestic, religious and political issues are rarely discussed in the home; the parents seldom read editorials, and the values underlying such issues apparently are never examined. However, some activist movements--especially student protest movements--are strongly denounced and such activities and their proponents are considered "egghead," "impractical" and perhaps slightly treasonous.

Psychological Assessment: During his school career Stan has always maintained very good grades, usually earning a "B+" or "A-" average. His reading achievement scores are excellent and his ability tests well above average, as indicated on the standardized measures given to him during the testing program in the ninth, tenth and eleventh grades. The California Advanced Reading Test, used for selection of our sample, showed that both his vocabulary and comprehension were equal to that of college sophomores. However, Stan does not do this well on mental ability tests. Although the California Mental Maturity Test and the Differential Aptitude Test from the ninth and the National Merit Scholarship Qualifying Test given in the eleventh grade place him within the range of what is usually termed "academically talented," his scores fall somewhat below the mean for this group. He scores at the 90th percentile when compared to an unselected population. Moreover, the American Council on Education's Critical Thinking Test, Form G (given three times during the study), consistently indicated that his ability was below average in logical thinking and problem solving in comparison with the rest of our superior experimental population.

In the three testing sessions (1962-1964), Stan chose studious as the most appropriate self-description on the Student Profile Check.* Stan saw himself as "a well-organized, hard working" student to whom grades were important. More specific attitudes changed, however, and the new patterns tended to conform with normative attitudes held by the majority of the experimental group (or perhaps when the experiment was over, to dominant attitudes within the school). On the three instruments (OPI, A-V-L and SIS) which assessed creative attitudes and inclinations, Stan was much like the total experimental group before the program, i.e., quite strongly studious. Immediately after the program he showed a marked change toward the creative intellectual style. A year later, out of the program now and a member of the high school football team, Stan was showing (as do many high school sophomores) a shift toward social leader attitudes. More specifically, at pre-testing his SIS showed a high studious indication and relatively low valuing of creative and social orientations. Similarly, at the beginning of the ninth grade Stan's OPI and A-V-L scores were at the mean of the experimental population. At post-testing his scores on these three instruments again fell at the mean and thus showed the positive change toward the creative intellectual style that was characteristic of the experimental group as a whole. For example, the Creative Intellectual Scale on the SIS was highest at this time. In Phase II testing, the Social Leader Scale had become highest on the SIS and the Political and Economic scales on the A-V-L were higher than the Aesthetic and Theoretical.

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*We have generally found that although students may vary in specific attitudes, they still tend to be quite uniform in their self-descriptions. In other words, Stan continues to think of himself as essentially studious even as his attitudes and behavior seem to reflect the varying school climates.

Stan is an unusual combination of tolerance--or at least social concern--and closed-mindedness. His score on the Humanitarian-Altruism Scale showed him to be somewhat more concerned about human problems than most other boys his age who were in our experimental population, yet at both pre- and post-testing he tested above the class average on the Rokeach Dogmatism Scale and Rigidity Scale, i.e., he appeared less open and free-thinking than other young people in our superior population. His scores would indicate that he was extremely dogmatic and rigid at pre-testing, but these attitudes had modified slightly by the end of the experimental program. On the Acceptance of Women Scale he appeared to be slightly more accepting of women than were other boys in the group. He specified that Level II* development on the Self-Actualization in Women inventory was both his real and ideal choice for a wife. Interpreted, this means he chose at both pre-testing and a year later to marry a girl who was only moderately interested in school and quite conforming in general attitudes. This was the same choice that the majority of boys in our superior group made.

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*This description portrays a girl who plans to attend college for a year or two and then marry--she tends to reflect in her development the needs and interests of her husband and children rather than the desire to develop and sustain a personal style and to engage in self-directed learning.

Psychological Dimensions--The Contemplative Mind: Although Stan is not an intellectual, he is certainly not anti-intellectual. He likes to think about new information, to fit it into things he has known before, and to use it finally in some productive way. Difficult work--up to a point--is appealing because he wants to "really feel he is learning" and besides, "hard work never hurt anyone." Even relatively complex problems do not deter him as long as he can organize them or manage to add them to his previous store of knowledge. Despite his willingness to expend a great deal of effort on school work, he is frustrated by his intellectual limitations:

> Lots of times I get mad at myself 'cause I can't do any better. I know it's not up to an "A" and my mother doesn't like that very well so that gets me mad. I spend a lot of time studying, but sometimes I just can't figure out the answers.

As we have seen, Stan's scores on the critical thinking test were relatively low. Those who have interviewed and observed him report, however, that he can manipulate abstract symbols within logical structures much more easily than he can evaluate less well-defined problems that involve complex judgments. Thus he may say flatly, "People are basically unselfish," without adding any qualifying explanation. Because he only wants to think well of human beings, Stan does not spend time exploring or pondering the multiple contradictions in human behavior that face him daily.

The Open Mind: When we first knew Stan, as a beginning ninth grader, he tested exceptionally high on dogmatism and rigidity. As he said, "I just can't understand teenagers who don't know right from wrong." He knew that there were standards and rules that apply to both student conduct and school learning. These rules, which he tried to follow so judiciously, allowed for little flexibility in his thinking as he was beginning to read and discuss the issues of the experimental program. But when he was told by the teacher and the film models that there were many alternative answers to some questions, he accepted this as the judgment of competent authorities. As a result, he developed an almost studied attitude of fairness and, as a good student, he sought to read as many diverse opinions as possible. His scores on dogmatism and rigidity dropped and he was frequently heard to say, "This is the way it seems to me but I haven't looked up any other points of view, yet, so I can't be sure." (Our interpretation is that this change in dogmatism and rigidity reflects Stan's adaptability to expectations by authority figures.)

The Inquiring Mind: Stan has not learned to value learning for learning's sake; he instead feels that the pursuit of knowledge should move him nearer to a practical goal rather than reflect the merry chase of a mind at play or the intensive search for an elusive truth. Doing what one wants to do and enjoys immensely seems a little disgraceful--sheer self-indulgence. When Stan was asked to define creativity, he said:

> I seem to remember that it is thinking up by yourself a certain thing or object and then making it or writing it out on your own. It seems a person's creative if his work is well-known. If other people think what he does is great, then it is. What the public likes is what really counts.

Stan is very interested in science and scientific achievements, but he does not feel that he will ever achieve renown or that he is really capable of outstanding accomplishment. His lack of confidence, combined with a constricted curiosity, extends to all aspects of the intellectual realm. Reading interests are limited. Only rarely does he read something that is not assigned, and he is more confused than delighted when faced with the open stacks of the library. He would prefer to have a teacher or a reading list tell him what to read and when to read it.

Only occasionally does Stan appear contemplative and to think voluntarily about the unknown. But, as he says,

> There is another me that I hardly know. Generally I think reading is a waste of time but sometimes I find myself caught by an idea in a history book or the suspense of science fiction.

Stan did manage to read Robinson Crusoe and Treasure Island when he was younger, but generally finds novels unappealing and poetry downright distasteful: "Reading should say something and get you somewhere."

The Humane Sentiments: Stan's idealism and desire to do the right thing come through strongly in the tests, the questionnaires, the interviews and our observation of him in class. He has applied his Sunday School training and his mother's strong sense of morality to the area of social concern, which he sees mainly in terms of an emphasis on home and community problems. As he puts it, "Make everyone friends; that way we'll all live together and not have to worry about each other." He is quite optimistic, and his desire for simple and direct solutions to complex and difficult problems often makes his judgments seem naive: "I think, now that the United States and Russia have signed the test ban treaty, we are getting a little closer together." His essentially Jacksonian views of democracy come through clearly in his statement that, "Every man is basically as good as everyone else and you can like everyone if you try."

Stan is particularly interested in science. He liked the Technological World in the Four Worlds Textbook much more than the other three worlds, but he does worry about the inability of science to cope with the problems it is helping to create. However, he is not sure that he can do much about these problems himself. "The individual can and should make this a better world," but Stan is not at all sure he will make a noteworthy personal contribution; "Maybe I don't have the ability. After all, the problems are pretty big ones."

The Independent Stance: Stan, as we have seen, is an extremely conscientious boy, a truly dutiful son and obedient student. Apparently he feels little need to assert his independence as an individual. As he remarked after looking at the situation toward the end of ninth grade, "Rebellion is silly and usually a waste of time. Adults have more experience and they generally know whether something is good or bad." However, as Stan has matured he has come to respond to "the best of student opinion" as well as to the views of his teachers. In other words, he wants to be well liked by his friends and at the same time be considered a good student by his teachers.

Stan enjoys doing things with other students, the fellows particularly, and extols the virtues of cooperation: "There's nothing like doing things together on a team. I think if everyone would just work together most of our problems would be solved." Stan's solutions to problems, unfortunately, rarely rise above group consensus. He is uncomfortable when asked to think in the hypothetical mode and plainly miserable when problems become extremely complex and there are no solutions--only decisions to be made. As Stan says, "High school students are much too young to make a decision or take a stand on an important issue. We just don't know enough about the rules yet."

Aesthetic Orientation: Stan has little interest at the moment in either the process or the product of creativity. As we have indicated, his parents do not read and are little inclined toward the arts. Like most Lansing adolescents, and the boys in particular, Stan believes "culture" is for someone else--probably girls. To be fair, though, it appears that his philistine stance does not reflect outright distaste of the arts but rather lack of a knowledge of the possibilities in the Lansing-East Lansing area. When commenting on the Van Gogh exhibit in Detroit that he visited while in the experimental program, he said, "I really enjoyed it, but I don't have anything to compare it to." He has never discussed his feelings about beauty and has not tried to write them down. In fact, he finds it almost impossible to express himself and reveal his innerself on paper. One interviewer asked him if he liked to write and he replied,

> I don't know. I wrote some for the social studies (experimental) class and I found it sort of fun--thinking of what I'd write and trying to put down what I wanted to say. It was awfully difficult, though.

When he was asked what he considered beautiful Stan mentioned only nature and things found in nature. In various classroom exercises he tended to choose the balanced and the simple over the complex and symmetrical. As the interviewer who saw Stan before he entered the eleventh grade commented,

> The boy's cultural interests are really meager. He hasn't had much stimulation along this line at home. But I think he would like these things if he had a chance. He is responsive to almost everything, you know, especially when adults give him guidance or he sees that his friends enjoy such expressions.

Sense of Destiny: Although Stan remains modest and conservative in his view of the impact he will have on the future, he does expect to be fairly successful. As he sees it, "Everyone can do well enough. It just takes effort and honesty." He continues:

> I don't expect to change the world. I'm not sure I'd want to take that kind of responsibility. But I do think most people could stand to be improved. However, people mean well. As for me, I would like to be an engineer or maybe a computer programmer.

to be nobody-but-yourself--
in a world which is doing its best,
night and day,
to make you everybody else--
means to fight the hardest battle
which any human being can fight;
and never stop fighting.

e e cummings
letter 1955

The Creative Intellectual Prototype

The creative intellectual as an adolescent "ideal" type is most nearly self-actualizing in attitude and behavior of the three types.* He is similar to the studious in that he is idealistic and responsible, but unlike the studious, he breaks with tradition and precedent. He wants to think for himself and in terms of the future, and he is concerned about both the human condition and the human estate. The social leader and the studious tend to live in the past and in the present and thus do not see a need for planning a future. Management will suffice. In contrast, the creative intellectual sees planned and intelligent change as the only alternative.

If we can agree with the philosophers and scientists who observe that to be human is to be a creature of thought and to have a sense of the future, then the young creative intellectual is more "fully human." His viewpoint coincides with those social philosophers who claim the world is too dangerous for anything less than utopia. He does not believe that the status quo or custom have approached such an ideal. He tends to be critical of majority values and conventional wisdom. To him, existing systems do not guarantee rationality, justice or legitimacy. Seeing the past and present as deeply flawed, the creative intellectual focuses on "what ought to be," not "what was" or "what is." He hopes to improve the present society by working toward humanistic goals such as liberty, equality and fraternity. And a few of them recognize, as Crane Brinton has, that he and other intellectuals will have to have faith, hope and charity if these goals are to be realized.[49]

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*The adult prototypes and historical antecedents (including case histories) for the creative intellectual style are discussed at length in Chapter II.

Despite the deeply optimistic view held by the creative intellectual with respect to the improvability of man and social progress, the face which the public sees is often skeptical, pessimistic and iconoclastic. The creative intellectual finds many of common man's social habits and ethical positions unattractive and untenable. For the successful artist or scientist, these general human doubts do not extend to an enervating self-doubt. Those who become truly productive tend to believe firmly in themselves and their ability to create or discover the new and the valuable. There is at times a quality of hubris. The socially creative and the utopians do not doubt but that they can plan a better kind of world. And for them, the process--the doing and the planning--is as important as the product. As we have observed before, duty and pleasure merge in such a way for the creative intellectual that he is often conspicuously, self-consciously and joyously engaged in learning. At such times work can be play; and learning can be for learning's sake. Unlike the social leaders who manage people and run businesses, the artists, scholars and scientists prefer to do their own work, not delegate it. Indeed, the creative act is and must remain an individual and not a corporate process. To the extent that this expression is effective, the self is found and identity takes on substance.

Learning becomes a central endeavor. They understand Ishmael in Moby Dick who held "a whale ship is my Yale

College and my Harvard." By such openness, a richness of experience and information is acquired and it is retained through mental rehearsal or by conversation or by writing. Colette considered her life to be "a series of moments of awareness"--these included her love affairs with men and her rapport with nature--and all were recorded candidly and subjectively.[50] Learning for such individuals is not confined to the time-frame of school or office hours or the space-frame of the classroom and the institute, but pervades the breadth and length of life. Non-verbal learning takes on great importance and for those of a generalist persuasion, nothing is irrelevant to anything else. True learning touches man's deepest nature, his inner core of meaning, his real Being. It is personal and collective, individual and universal.

Men are guided by the questions they ask and the aims they hold. The creative intellectual does not plan to succeed through academic thrust and sortie nor by economic pillage and plunder, but hopes instead to leave his mark by what Tillich has called "the courage to be an individual." This is reflected in the systematic thought of the scientist, or in the "directional free association" of the artist. The plan is to become a resident of the creative and/or intellectual community. Some expect to embrace social reform, others want to find and present themselves through the arts, and still others prefer the discipline of the sciences. Almost all value flexibility and intellectual and moral forthrightness. Many are introverts who focus intently on creative/intellectual interests and do not develop interpersonal facility.

Unfortunately, the organizational society and the institutionalized schools do not encourage such activities. The school can tolerate those who work on the assignment (the studious) or those who disregard the assignment (the social leaders), but not the creative intellectuals, who challenge the validity of the assignment. As Presthus remarked, being against self-realization would be like being against an early Spring, but such is our Janus-like character in the schools that we have no problem giving lip-service to these values and at the same time demanding conformity.[51] The bureaucracies within the larger society also view the questioning mind as anathema. Many of the attitudes and values of American society are directly and specifically opposed to the most fundamental aspects of the creative intellectual style. This opposition comes in the form not only of apathy toward autonomous efforts, but in voiced disapproval from family, friends and teachers. As can be seen in the cases which will be presented, the students who are committed to this style, and variations on the theme, continue to search for a milieu in which the questing mind can feel at ease.

> "It sometimes happens that the very center of organization of a personality shifts suddenly and apparently without warning. Some impetus, coming perhaps from a bereavement, an illness, or a religious conversion even from a teacher or book, may lead to a reorientation."
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> Gordon Allport, Becoming (New Haven: Yale University Press, 1955, p. 57)

Carol Richards--Neo-Creative

There is, in all men, a creative vision and a hidden kernel of hope. For the social leaders, this birthright has been sold for pottage, but for the studious it remains--the dormant desire that may be brought to life by happy circumstance or by tragic disruption. Change from conventional academic achievement to the creative intellectual style can occur if the conditions are special or the individual is ready. New directions, new goals and new ways of working can be assumed at any point in life. A revelation can occur, metamorphosis can take place, and the individual can move into a higher order of evolvement.

At least half of the able students we have studied, particularly those who call themselves studious, choose the creative intellectual style as ideal. It is this group that has a readiness for positive personality change and a propensity to move toward more self-actualizing ways of behaving. Meeting someone who provides an acceptable model or offers needed encouragement may make a difference. The knowledge that creative styles and fulfilling patterns of life are possible may provide impetus; or recognition from a "significant other" may turn the tide. As Emerson once said, "Everyone needs a promoter." Experiences which result in intensive self-search and reconsideration may open the door to a new way of living. These can include the ideas and people met in books or in discussions as well as in the conditions of unusual perceptiveness which come from reverie or from peak experiences.[52] These can include the times of personal vision in which things are reborn as if being seen for the first time.

There are adults who turn their backs on routine patterns of work--following orders and meeting deadlines--to live lives of creative expansion. Earlier we have referred to Bucke's reports of cosmic consciousness[53] and Maslow's studies of self-actualizing persons.[54] Both investigators report that there was a significant gain in self-awareness in the middle years but both also noted the uncommonness of such occurrences. Our studies of adolescents have led us to ask whether these kinds of understanding cannot come sooner. Certainly there is a plasticity in youth that permits and even welcomes change. Could not growth proceed more directly toward self-actualization rather than be distorted and delayed due to inadequate models and a lack of encouragement and expectancy? The search for identity does not have to end in simply confirmation as one is. It can--if the setting is right--result in the opening of channels to new and more rewarding kinds of growth.

Description and Family Background: Carol Richards is a small, neat, precise looking girl, feminine, yet a little on the tailored side. In the first interview, done in the summer before she entered senior high school, her most outstanding personality traits were an awareness of a new-found self-confidence and an emerging belief in her intellectual ability. She attributed these discoveries to the experiences she had in the ninth grade, and to her teacher's influence in particular. She characterized herself as having been a good, but shy and quiet student previously, who had not dared to think of herself as more than average.

During the experiment some latent force seemed to emerge in Carol, and she found herself taking an active part in the intellectual life of the experimental class: outspoken in discussions, ambitious in preparation for class work. Her earlier fears of making "a spectacle of herself" seemed to have subsided. She even went to the extreme of arguing with the professionals whom she was interviewing for class material.

The interviewer found Carol to be very open and eager to speak of this new personal growth, willing to elaborate upon insights on her inner life and to present her views on people and the world in general. She was frank and even a little abrupt in manner, but all in all, very pleasant, very earnest, and very eager to voice her opinions.

In the second interview a year later Carol's enthusiasm for the creative intellectual style was so marked that one of the research assistants who listened to the tape recording several times commented that she seemed to be going through the college sophomore metamorphosis. She spoke of writing and writers, symbols and style. She had begun to break away from her mother and became involved with girl friends who seemed equally interested in world problems, independent behavior and aesthetic expression. She had developed a particularly strong friendship with Katja, whom she met in the experimental course.

Perhaps the reason for Carol's contemplative mind is that life within her family has been greatly disrupted. She very seldom speaks of her father, but her mother has had some influence on her. Mrs. Richards is a rather pleasant, conventional woman whose life is based largely on religious faith. She is orderly and lives a patterned life, and is also fairly nervous, the kind in which daily deviations must and do result in "nervous" tension. She has been rigid in bringing up Carol, placing particular emphasis on obedience, which Carol has grown to resent as a limiting factor in intellectual growth. Carol concedes that obedience is a virtue in certain matters such as public ordinances and divine law, but obedience to tradition and to cultural norms and submission to certain "acceptable" patterns of behavior restricts man's freedom to explore new directions of thought: "People stagnate," she said, "and when this happens culture stagnates, too." Sometimes Carol is sent to live with relatives and she often feels peculiar and shunted around: "But then I think of the millions of homeless people in the world--all those poor people who just wander around with nothing to look forward to and nothing to reflect on and--My God! I actually live in luxury compared to them!" However, she dislikes many of the chaotic tendencies and habits of her relatives, so she confines herself much of the time to her room with her own books and ideas. When she is alone, "I love--love deeply and hate deeply. I love people and what they are and what they can do....I hate misery and the poor conditions which the people I love find themselves in."

As a young girl, Carol did not have many opportunities to read. There were few magazines or books in the house, but she read the newspaper often and anything else that she could confiscate--even temporarily. She didn't know what she was looking for but she always seemed to be engaged in a search. Nothing was quite clear enough or made really good sense but no one would listen to her questions. The many incongruities of life made a deep impression on her sensitive young mind, and she feels that this helped her to develop her humanitarian attitudes. Now she reads all that she can, and has developed three models whom she admires greatly--Gandhi, Schweitzer and Kennedy. She studies the social sciences on her own, and believes that she is beginning to find her place in life as a result.

Carol's attitudinal transformations are reflected in the changing descriptions of her Alter-Ego,* in which she describes the girl she admires most. In the summer of 1964 she tells of her ideal self-image:

> She is the most non-conforming person I know. She has really broken away from our little society. I admire that. And the way she dresses, acts, talks. She's extremely open-minded. She will stand up and say "no" in a crowd. It's fun to be with her because you never know what to expect. She seems to think all of the time and comes out with the most unusual things.

This was quite a different view than she held in September, 1962, before the experimental program had begun. At that time she wrote of her Alter-Ego as follows:

> The person I write about is my ideal person. She is Christine Smedly, a girl 19, and a brilliant student who works hard, and yet she manages to keep her popularity. She has all sorts of beautiful clothes and plenty of money. At the moment she is studying very hard to be an astronomer. She loves sports and participates in as many as she possibly can. Although outwardly it had been known she was to become a nurse, her secret ambition was always to become an astronomer. The one good thing about her is that no matter what, she always puts her studies above everything else. It is quite apparent that she has had a very good upbringing, both religious and vocational.

By the end of the experimental program in February, 1963, Carol's ideal had changed. Instead of studying hard and focusing on clothes, money and popularity (while dreaming of being an astronomer), she has decided it is best to become aware of the world in all its variety. Her Alter-Ego story at this time is of another Christine.

> Christine Harold, a 21-year-old woman had just set out from college into a vast world. She had studied many things in college--art, world problems, world situations, economics, everything that is really basic. She is now setting out to travel all over the world. She was undecided in her

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*This refers to the AE test, an instrument that asks each student to write what sort of person he would like to be in his future life.

> occupation, so she decided to travel and find herself. All the while she was constantly reading and becoming aware of our world and all its aspects. She was living a full and wonderful life. She wrote a book on all of her travels and the situations she came upon and what she thought of them. She didn't need to settle down, for she was doing what she loved and since we have but one life why not live it to its fullest extent.

However, by the summer of 1963 Carol has decided that she should do something about this great and wonderful world and the problems that too many uncaring people have produced. Thus she has adopted the ethic of social service. In her interview at that time she said that she _must do something_ to help the world. She considers the Peace Corps as a way to help people--mankind in general, America and herself. She continues,

> I'm terribly interested in the problems of the world. . . . We should try to work out ways of solving these. Each of us should think about them.

In the spring of 1964 this social concern was still her primary focus. Her Alter-Ego story at this time demonstrates a finality of choice and an accomplishment of goals.

> Sue Diane Noble was a shining example of the _ideal_ American. She had been in the Peace Corps only a few months and already much had been done. This small village in South America had been cleaned, scrubbed and pests eliminated. Sue had physically participated in the clean up and rebuilding of a few huts. A small school, hospital and other essential establishments were erected.

Psychological Assessment: Carol has always done very well in school--maintaining an "A" average during the ninth grade--although her grades have dropped slightly since the end of the experimental program. On achievement and aptitude tests, given as she entered the ninth grade (the _California Advanced Reading Test_, the _California Mental Maturity Test_, and the _Differential Aptitude Tests_), she scored near the mean for our superior experimental population. Her performance on the National Merit Qualifying Test in the eleventh grade was somewhat better in relation to the total experimental population than on previous tests, and placed her approximately one-half standard deviation above the mean for the group. The ACE Critical Thinking Test, Form G, also showed an upward trend from 1962-64 that cannot be entirely explained by Carol's increasing maturity. At the beginning of the ninth grade her critical thinking score was comparable to that of college freshman (a raw score of 31). During the experimental year it rose seven points and in the following year a gain of five points was noted.

On the ninth grade pre-testing Carol indicated on the Student Profile Check that she felt herself to be the studious type. This holistic self-assessment was confirmed by other measures. Her scores on the tests assessing creative interests and values--the OPI, A-V-L and SIS--all placed her near the mean for the experimental group at the beginning of the ninth grade. However, both her self image and her test scores were radically different by the end of the experimental program. She now saw herself as a creative intellectual and test data (high scores on the Aesthetic, Complexity, Originality and Thinking Introversion scales of the OPI and the Creative Intellectual Scale of the SIS) confirmed that her attitudes were similar to adults whose interests were in creative intellectual realms. A year later--on Phase II testing--Carol's scores on all these instruments were among the highest received by students in the program. These changes were confirmed by her accounts of reading interests and other spare-time activities as these were reported on the SIS.

Carol was approximately one standard deviation above the mean for our experimental group on the Humanitarian-Altruism Scale in both 1963 and 1964. This is to say that she is tremendously concerned about human problems and would very much like to take pro-social action. At pre- and post-testing Carol also showed marked "openness" of mind; in the fall of 1962 and in the spring of 1963 she was almost a standard deviation below the experimental group mean on both the Rokeach Dogmatism Scale and Rigidity Scale.

Perhaps one of the most distinctive and strongest characteristics that Carol revealed in our testing program was her interest in independent behavior and career orientation in women. In the post-testing and a year later in Phase II testing her scores on the Acceptance of Women Scale were among the highest received by any of the experimental girls. And on the Self-Actualization in Women inventory in 1963 and again in 1964 she chose the Level 3 girl to describe both her actual and ideal self. In other words, from the results on these two measures we can infer that Carol wants to be independent and self-actualizing in behavior, and that she hopes other women will have opportunities to develop in this manner as well.

Psychological Dimensions--The Contemplative Mind: Carol likes to think about a great range of problems and has shown this inclination toward contemplation since she was a very small child. Her solitary, thoughtful behavior has always been accompanied, however, by an active interest in people and a strong desire to be obedient:

> As far back as I can remember I liked to go in a corner and just think. Maybe you'd say I wasn't really thinking then, but I just liked to be alone with my ideas and dreams. No one could understand that. I always liked to be by myself. Oh, I liked to be with kids. But I'd stop playing and go off by myself. They didn't understand. I still like to be quiet and just think.

These quiet, reflective times can give one an opportunity to work out better ways of living, Carol thinks. She feels people should plan ahead and organize their lives, and is appalled by what she interprets as the needlessly desperate tone and haphazard character of the lives of her immediate family (except for her mother) and of her relatives:

> My relatives are all about the same except for mother. She is the only one in the family with a sense of direction, who knows what she wants. The rest are sort of,--ugh!--well, you know. They just don't think and don't plan. They seem to be wound up by some mysterious force and then they scoot off in all directions--usually late and frantic. I read somewhere about "motion mania"; I think they have it. My brother and sister are always on the go, but they never seem to ask why. And my aunt and uncle--I'm staying with them right now--don't ever think or plan or organize their lives. They are always late to everything. It seems to me you should sit down with your thoughts and try to find a pattern and get a sense of proportion. That's what I liked about our Four Worlds Textbook. We looked at the whole world and somehow we could manage it. I found that I could separate things and put them back together.

Carol admires her mother (who also likes to read), and reports that the mother is the only one in the family she can talk to. She likes to discuss why things happen, what is behind it all. Only rarely would she expose herself to raw experience without reflecting on what had occurred. As she says, "My brother and sister like horror movies but I don't understand how they can get so emotional about them. I think about the writer and what he was thinking about when he was writing."

A year later, in her second interview, she discussed critical thinking and her desire to find patterns again:

> I like the idea of making sense out of the world, but all of us have to be careful as we apply these patterns. Classification creates precedent and we can create straight jackets for ourselves. Generally I move toward the looser and more complex kinds of organization. They allow more freedom. Sometimes I think it's only the teachers who need the textbooks. The students should learn to work in freedom.

Carol felt that despite her interest in "thinking" as a child, she did not really think until she was a ninth grader. Mainly she saw herself as a socialized, obedient child:

> Before, I had old-fashioned teachers who taught two and two, you know, right out of the books. Now the last year in junior high they let me have ideas of my own; I don't have to think something just because the book says so. I've even had the courage to argue with adults! I really tried it. I was arguing about capital punishment with this local lawyer; he believed in it and I didn't. I went to the encyclopedia and magazines and books and everything I could get my hands on, and I wrote this up. It was a kind of editorial. I was trying to give him all of these facts. Finally he said, "You've got a lot of good points there--you did a good job, but you still haven't changed my mind!" I couldn't understand that. He didn't have any facts but he wouldn't agree with me 'cause he already had an opinion. All he would say was, "You are too emotional about it because that's the way people are about capital punishment." Adults are always telling me I don't know what I'm talking about. I get so mad!"

Carol's concern with world affairs and the future of man was revealed in a discussion which followed the showing of the Loren Eiseley film (from the Being and Becoming Film Series) in the experimental social studies classes during the 1962-1963 school year. A section of the discussion transcript follows:

> Carol: I agree with Dr. Eiseley that we must plan for the future; we must respect it and we should care about it, because if we don't we all know where it is going to end. If people were more concerned with philosophy we might have a better chance to survive. People must think and talk and care about things. You have to bring forth an idea and then cultivate it.
>
> A classmate challenged her with: "If you want your philosophy to grow and spread throughout the world, you have to prepare for a fight and there is going to be a fight."
>
> Carol: But if you use force, you are lowering your ideals and putting yourself on a level with someone else's philosophy. We have to do it by setting an example, not by forcing our philosophy on them. We have to educate ourselves about our enemies and then we will understand them.

And then in a later dialogue with another student on the common man:

> Student: The intellectuals run the world.
>
> Carol: The common man is the one who should do something about it.
>
> Teacher: Well, what are you doing, Carol?
>
> Carol: If we learn about our problems and discuss them openly as we do in this social studies class, then I think we can help in world government. It's our responsibility to learn as much as we can.

The Open Mind: Carol reads widely and reflects upon and is influenced by what she reads:

> I change my mind often. What I read influences me. For instance, I'm interested in Vietnam, but I know there are no pat answers. Sometimes trying to really understand and sort things out is frightening and confusing. When you study you get more opinions--a range of opinions--and I would say this really helps. I admire the non-conformist with the open mind who is outspokenly honest.

Later in the same interview she related this interest in diverse and challenging educational patterns which appealed to her:

> Discussions help me to understand things, especially if the people in the group are open and intelligent and well-read. Classes are too large in school, and we shouldn't just read textbooks. I like to hear all sides of an issue--it's hard to be heard in a big class--and read from many sources. It was this way in our ninth grade social studies class, but the course was so new. Maybe I wasn't ready. Before I had mainly thought about getting good grades and boys; I didn't really think about world problems. I think I would get more out of it now. This year I've had to keep my interests up on my own. I'd like to read and discuss and I'd like to go on field trips again.

The Inquiring Mind: Carol's memories of school show fondness as well as disappointment:

> I was real excited about school, even when I was little, but then I didn't know what to expect. I just went along with it. They taught us right from the books; I didn't know any better. They made you do something because the book told you to do it. That was the kind of teacher I had all through school up to the ninth grade.

Carol took the experimental social studies class in ninth grade and says that she "really changed." As she phrased it, "I don't think I was really aware of anything before that." This change from the studious to the creative intellectual style was noteworthy, as we have seen, in her scores on our attitudes, interests and values assessment in the fall of 1962 (pre-testing) and again in the early spring of 1963. Carol commented in her first interview, the summer following the course,

> Here was a course where I was allowed--even encouraged--to think. Someone seemed to believe teenagers were worth wasting important ideas on, and they put the responsibility for learning on us. It was a funny feeling, you know, all of a sudden to just walk into the world. You take a look around and it makes you sick. It really makes you want to do something.

In her second interview--and after a year in senior high school--she reflected,

> After taking the experimental course, it's hard for me to study the conventional courses. A bad effect of the course is that my grades have gone down this year. My interests have changed so that I can't keep my mind on studying humdrum courses. I've become so involved in my own education, I feel like I'm wasting time in school. Before I took the course, I wanted to be a nurse or teacher, but now my horizons have expanded--I want to go into something like human relations.
>
> In geometry, I read all the time in class. I think I could have learned geometry long ago. In grades 1 through 8, it was the same old thing over and over again. Most intelligent kids are bored to death in grade school. If kids could be separated according to ability more, we would be better off. In grade schools, teachers don't realize that you're capable of so much more--just because you're a little kid.
>
> I don't think I ever had a teacher in the grades who encouraged outside reading. The books in the grade school library--my God, I could go through them in a half an hour or so, and no one ever encouraged me to read further.
>
> School had me brain-washed. I studied as an automatic reaction. I always was obedient, I guess.

> And I was shy. I did what I was told. I didn't want to make a spectacle of myself--at home or at school. Those early years when I was beginning to think, people told me I wasn't old enough. I had to keep my thoughts to myself.

Carol has always been a reading addict although, as we have seen, she felt her reading left much to be desired until the ninth grade. At the end of the experimental program she commented,

> I read all the time in elementary school. I was always in the library reading every book I could get my hands on. But I didn't ever really read until this year. I didn't read a book for what it really was; I read just what it appeared to be. I'm soaking it in now and I fight with the writers. My folks read Life, Look and Post but I want something more. I like the kind of writers I find in Harper's and Saturday Review. I already own a bookcase full of books. I like paperbacks because I want to write in the margins and make my points, especially when I read essays. I read Steinbeck, Dostoevsky and Tolstoy. My parents object to things like Gone with the Wind and Grapes of Wrath. They just don't understand that I can read critically and that I am maturing.

She reminisces:

> Mother told me once I couldn't read a book, because I was too little, so I decided to read it. And that got me started on reading more difficult books. That was a major turning point in my life. We could have learned so many things when we were younger, but we wasted our time, when we could have been working on our own and learning more. I hate to apply myself to a subject full time, when I don't like it. But it was different when I was little. I think school used to have me brain washed. I was told to learn something and I learned it without question. I was studying as an automatic reaction. I used to think that I was enjoying something when I really wasn't.
>
> I don't like school work because it's so conventional. You study right from the book, and you do this and that and you don't ever get to go outside because you've got so much homework and other stuff. I like it better if you can go to the library and pick out a book on each subject and read it and get to understand it. That way, instead of getting it fact for fact out of a textbook and having a test over it, you learn something. I think you get a lot more out of it if you read books on your own.

The Humane Sentiments: Carol says with a great deal of feeling, "I've got to do something to help the world; I'm glad I'm like I am instead of like my sister. She takes the world for granted. Devil may care! She doesn't care."

However, Carol personally is not sure how best to help. For example, she feels most youth organizations do not offer a way to contribute to world problems and comments: "I belonged to the Girl Scouts for a while. Things like this are just too organized. I'd rather work in Civil Rights; I would like to do something in human relations."

Carol reports that her family is religious in a conventional sense and wants to help the underprivileged, but she finds that she differs from others in her family and neighborhood in the way she would do things.

> Of course all my family is for the underdog. But Mom would die, you know, if one of us girls married a Negro. But we're a family family and American Americans. The typical American doesn't think about the problems we have, not really. He thinks about getting ahead and his family. He doesn't think about juvenile delinquency. Once in a while you'll find someone who'll contribute to this or that but they think more about their everyday problems. You can tell by what they write to Ann Landers--all that trouble with all those relatives! People are caught up in the day-to-day--they just live and they don't think about all those people who are starving and try to plan what to do. There are plenty of people in their forties who could still do something about the problems of the world but they think about themselves, their families and their neighbors next door!

When asked about her own plans for the future, Carol replied,

> First I thought of being a teacher and then I thought of the Peace Corps because I thought I would get a lot more done there. I'd be helping America, and people in general, and myself. I've got so many ideas in my head I don't know which to turn to first. I'm terribly interested in the problems of the world; the course helped me to see them. We should try to work out ways of solving these. Each of us should think about them. I had never before thought I could do muchas an individual

> but then I read a couple of books on how the individual can have impact. I wrote an editorial for our paper. They didn't print it but I did make this point. But now I really think I've got to do something about world problems. And I feel I can do something--even by myself. I just can't explain it, but I feel it.

It is apparent that Carol thinks all people have responsibilities to their societies and to the peoples of the world at large. She feels adults could do far more than they do, but she is not sure the adults of the sixties will--thus she puts most of her faith in young people. Among adolescents she notes that girls seem to be more advanced in the development of a social conscience. As she says, "Boys are less thoughtful. Afraid they'll lose that precious image of toughness." In Carol's statements there is a common thread which we interpreted as a world view. When asked to give one wish, she replied, "If I had one wish I'd wish for world peace. I've thought about that before and that's the one thing I'd really like."

The Independent Stance: Again and again Carol shows a very strong desire to speak out and make her own decisions. She wants time to be alone, time to think things through, but she recognizes there must always be compromises with the family and the community. Thus she seems to combine her independence with a sense of responsibility.

> I've always liked to go off by myself. Mother didn't really understand. I even used to think I'd like to live on an island all by myself, do the things I wanted to do, read books...but obedience was what my parents stressed most. It helps. You can't be independent in everything, totally independent all of the time. There are some limits that you have to stay within. But I always come back to thinking about doing the things I'd like to do. I get that feeling I want to be all alone but I would probably want to talk to someone or share things.
>
> I think differently than my family in so many ways. My mother's for integration in schools and

> restaurants but she wouldn't want a Negro family to live in the neighborhood. As I said, she'd die if I married a Negro or something like that, which is very possible. I don't know, I believe in it because of these people I know. She's a woman of English descent and he's Chinese, and both of their families have cast them out. But they love each other very much and I don't see anything wrong with it. They didn't marry to spite someone. They were in love. They believed in it.

Carol's independence of mind is apparent in her attitude on religion:

> I'll question my religion and then in the next minute I'll think it's really great. At an earlier time there was a security in religion, I think. Without religion I wouldn't be so humane. In our religion we are supposed to love others as ourselves, the Golden Rule. Somehow this seems to be easier for me than for some people. I like to look at people open-minded and yet I find I'm very critical. I never say anything, but I feel this way, and that bothers me. I just think about things--the way people act, the way they talk to other people, the things they say. I try to be nice to everyone even though I do think these things.

Carol has a strong drive toward mastery, also:

> I guess I try to do difficult things by myself quite often. Even when I was in the first grade I can remember trying again and again to read Swiss Family Robinson. I finally had to give it up, but I tried very hard and would struggle through a page again and again.

Carol's efforts to shape her environment and influence the world are not confined to books, to the home or even the community:

> I'm rebellious about many things, mainly the boundaries of our society--what happens about races and all that stuff. I just want to tell the whole world off about it. And yet how can you when you're just fifteen? But I do think young people have things to say worth saying. I'm always arguing with Mother. She'll tell me I don't know what I'm talking about and I'll go to the library and look everything up on it. But she won't listen to me. Even so I get the satisfaction that I have thought things through and have checked the facts.

Not only does Carol not accept the status quo herself but she also enjoys the companionship of other dissenters:

> In school I don't like people to agree. A discussion should bring out good points on both sides and that's what I like. But you should be involved. You have to care what you're talking about. If you don't feel strongly about what you're doing, there's no sense in doing it. I feel strongly about the things I do, you know. I like to think up new ways of tackling a problem. And I like to approach things on my own rather than have someone tell me how to do something.

The Aesthetic Orientation: Carol has had little opportunity to discover the aesthetic world that man has created. Like most able children in the Lansing area, she has few opportunities to explore the arts and to discover what would appeal to her. Her parents have never taken her to concerts or art exhibits, and she feels that her interests in this area are directly the result of the encouragement from the school. In the experimental social studies class she read her teacher's copy of Lust for Life in preparation for a class visit to a special Van Gogh exhibit in Detroit.

> I don't think I would have liked it (the exhibit) as much if I had not read his life story, because you have to understand the artist before you truly understand his work.

In reflecting on the aesthetic dimension a year later she said:

> I think what really impresses me is that someone can put down his feelings on paper. I like to see something that the artist really feels, something that he really puts all his feeling into the color and shape.

Carol has come to enjoy poetry and writes it when she is meditative or sad. She thinks of poetry as melancholy and something very private. "Poets don't write for a group. They write for individuals. I love to read poetry over and over." She loves words, especially "the roots and varied meanings and metaphors. When they are used they create a special beauty. They are often the best way to show feeling.

Books would be drab without these figures of speech." In speaking of beauty she made clear her preference for natural formations over the buildings man erects--"except for Gothic cathedrals." She particularly enjoys the natural beauty of Petoskey in northern Michigan. And she revels in beauty for its own sake: "Beauty erases everything else from your mind. It absorbs your whole soul and you're there in it. You can actually feel the beauty there inside you."

Sense of Destiny: Carol has great hope for herself, for the young and for mankind in general. It is her view that recognizing abilities will be a step toward their realization, and that a human being must use the abilities he has. She speaks of the influence of her teacher in the ninth grade experimental program:

> Mrs. Howell has really encouraged me a lot. She told me what my abilities were. Knowing that I could do almost anything helps to bring them out, you know. I began thinking about what I could do and I couldn't do. I was almost shocked when I first thought about it. I had thought I was average and then I had that course and it brought more out of me than I thought was there. I've sorta been shown that I have the ability to do almost anything I want (that is, if I study or if I have the money). And I feel I must use my abilities. I have a conscience; I just feel compelled to do what I have the ability to do.

Carol feels she would like to attend a small college. Here it would be possible to engage in discussions and to meet professors who would be "knowledgeable human beings, possible models." She would probably like to live in a college town.

Carol has a great belief in the potential of the youth and their ability to handle the world problems in the future: "Children could become more intelligent. If we taught them to read when they were three and encouraged them to think, I'm sure things would change in the world. School should not waste children's time."

But Carol thinks adults, too, are being caught up in this increasing ability to use the mind:

> People are becoming more intellectual. People are thinking more these days and they are accepting non-conformity. We're going to have Greenwich Villages all over the United States. Society binds too much, but people are breaking away.

It is her view that if we changed educational methods our young people would become not only more intelligent but would also develop more of a social conscience. Such changes should be made for everyone:

> Kids in ordinary classes just don't read books like we have read. There's really a difference. It seems like I'm twenty and they're thirteen. They don't realize what is going on in the world. I can see how this can happen because no one has ever introduced them to ideas or to problems or to the world. Even average students would gain a lot from a special course. Oh, some would take it at their own speed, but I think they would be inspired. And if only a couple of them were, it would be worth it anyway.

These educational changes might result in modifications of attitudes which would affect all of society. Carol feels that adolescents may bring about some needed changes in society which adults, due to their prejudices, cannot accomplish.

> My mother is prejudiced--I know she is. She can't think of things objectively and many adults are this same way. Adolescents aren't so prejudiced. Adults develop this mental block, and they have a harder time looking at things. Teenagers still haven't settled in their opinions, and they are more open to new ideas as a result.

> Gandhi once said that what worried
> him most was "the hardness of
> heart of the educated."

Katja Toth--Scientist-Scholar

For many young people the distance between past and present has expanded to the point where they cannot find relevant models. This problem, which may be called a disaffiliation with the past and may express itself in what Riesman has called privatism, is particularly apparent among the most able and thoughtful of our youth. However, the scholar-scientist model remains viable for some gifted young people and particularly for those who disaffiliate themselves from the youth culture and identify instead with the cultural continuity that might be termed the realm of scholarship and creative endeavor. The tradition of the scholar who is engaged in a disciplined and intense pursuit of truth is an old one. Bacon is the exemplar and the Enlightenment set the style. Models are abundant in the scholarly establishment, among scientists particularly, who are strong believers in a universe of truth and who feel that man has and can continue to bring us closer to these ultimates by his discoveries and creations. There remains a faith in the achievements of rational knowledge by objective methods. The passion for discovery not only embraces the joy of finding out but also includes the excitement of the pursuit. Their dogmatism and ideology is the scientific method and the search for truth.

For many, knowledge and creative achievement loom as more important goals than the development of more adequate patterns of human interaction. For this group, the quality of immediate social life is not as important as the formulation of new theories to explain the universe or new designs for man's habitations. Such respect for the mind and creative imagination, if not accompanied by an eye cast toward society and a generous heart, can lead to scientific determinism. MacKinnon[55] found much dedication to their work among his architects but little pro-social activity, and Roe[56] and Eiduson[57] report a lack of strong altruistic inclinations among the scientists they studied.

With the scientist-scholar there is a willingness to work hard and to postpone satisfactions and defer rewards. They have a sense of continuity, of being part of a past. This offers a security not available to youth less committed to learning or at least to learning within the confines of scientific or scholarly paradigms. However, such emphasis on the intellect and esoteric scholasticism can become a retreat from humanness, even a rejection of life. As Maslow says, it can be "A sort of high IQ return to the womb."[58]

Description and Family Background: A Hungarian-American girl named Katja Toth has been chosen to exemplify the scientist-scholar. While we concentrate on Katja herself in this description, we will at times refer to her twin brother, Jon, since the two have many of the same activities and interests. Their relationship symbolizes the strong support and encouragement that the scientist-scholar often receives from his family which enables him to preserve his unique identity in an often hostile environment. Katja comments on this:

> At first we lived right by the park and we spent all our days at the park. And I remember that Jon and I were always happy. We never had any big fights or anything like that, but we were never really close until we moved to Lansing. Because we had moved and it was new, we didn't have too many other friends. Jon has only had one or two real friends and it is the same with me. I think we are rather close.

Katja is a small, attractive, vibrant girl who could probably be the "most popular girl in the school" if she desired. She values getting the best grades and would go to any competitive extreme to get them, probably alienating many other students while doing so. Being a very intelligent girl who might even appear more able than she actually is due to her highly developed verbal skills, Katja is eager to converse and share her opinions--most of which are strong, almost to the point of bias--and especially enjoys criticizing others in areas where she herself feels superior. Yet such criticisms more often take the form of sharp wit than of complaining, and one would find the remarks delightful as long as he was not personally the object of the attack. Katja's desire to get the best grades in school seemed to be more the manifestation of a highly competitive spirit (reinforced by a Hungarian home which had a high regard for intellectual achievement) than an indication that she is anxious to please her teachers in the studious sense.

On the surface Katja reacted somewhat negatively to the experimental class, but she seems to have been objecting more to its humanitarian-idealistic emphasis, particularly as expressed by the teacher--an attractive young woman--than to either the amount of work or the structure of the class itself. Hardheaded individualism, it seems, had led her to reject the possibility that humanitarian goals and sentiments could do anything but sacrifice the creative, anomalous, aggressive individual for the sake of a slothful and ignorant mass. She does not think she should have to spend too much of her own time working simply to help others.

Katja was, in fact, one of the most interesting girls in our experimental program because her personality encompassed not only the competition, dogmatism and ability mentioned above, but also included a surprising degree of emotional openness as well as a remarkably good memory of the thoughts and emotions of her early childhood years. These reflections revealed a more wistful side of her nature--romantic philosophizing about the stars, introspection, etc.--

reported so vividly that they appeared almost to be verbal paintings. Because Katja is such a complex person she is hard to define easily, except perhaps to say that her ambition and ability make one expect something out of the ordinary from her.

Katja and Jon came to the United States when they were three. Their parents settled in Flint where the father worked in a factory for nine years. Because of difficulty with the new language, he was unable to teach in a college preparatory school, as he had done in Hungary, although his education in science was roughly comparable to that received by many Ph.D.'s in American universities. When the family moved to Lansing three years ago, he took a laboratory position with the government, more commensurate with his education, but he chafes under the routine requirements and longs for the intellectual comrades he had in Europe.

The mother had been a nurse in Hungary; and when the twins were five she began to work in a hospital on the night shift, so that the father could care for the children while she was away from home. The parents never wanted the twins to have a babysitter, and the father gladly fed them and put them to bed and, even more important, talked to them about ideas, books and their European heritage. Katja was very unhappy with this new arrangement at first because she missed her mother, but since then she has grown to be very close to her father. "My father became a sort of mother, too," she reminisces. As Jon says of Katja,

> She can argue with father on an issue for days at a time and he'll tolerate it. They battle continuously and I had better keep my mouth shut. It's true--she argues everything from racial discrimination to literature, even to religion. I think she has my views. But I really agree with my Dad, too. Katja says I worship him and I don't. I wouldn't do the things I do sometimes if I worshipped him.

Their childhood seemed to be a very happy one. Katja reports that she was never punished physically, and has always felt her parents loved her, no matter what she has done. She notes,

> We take vacations together and we do most things together. Our parents have always kept close track of us and what we were doing. I think it is a good idea. At least they care about me. They want to know what I am doing. Of course, I don't always tell them everything, but I tell them enough so we can communicate and they know what is going on. Still I feel that I can do what I want and remain a very necessary part of the family.

The twins enjoy each other, also. Both are highly intelligent, testing among the upper two percent of American youth. However, the most striking thing about them is their identification with the intellectual world at large--and their feeling of independence. Katja says,

> Frankly, I think Jon and I have been left alone to a certain extent to mature in our own way. Like Father has always stressed doing well at school and that sort of thing, getting a higher degree in college and all that sort of stuff. But, as far as conforming, I don't recall my parents ever making me do something that I didn't want to do, really, unless I realized that I should do it. But otherwise, I've been left on my own and have been really independent.

Katja's parents have fond memories of her as a child. The father recalls particularly her independence, and her mother remembers her as a diplomat even at an early age. Apparently she was careful not to offend unnecessarily. As a child of three, when offered food she did not want to eat, she would say, "I'm sure it's very good, but I don't want it now, thank you."

Both Jon and Katja were reading before they attended school and there is every indication that their parents, particularly the father, approved of and fostered this early intellectual development. The two children have continued to be avid readers, particularly Katja. When she was nine she began to check books out of the adult section of the library and remembers conflicts with the Flint librarian since the rules discouraged such precocity. However, she already was a girl with formidable charm--to be used as needed--and soon had the librarian not only on her side but also searching for books that Katja wanted.

Psychological Assessment: Katja has consistently ranked at the top of her class academically, and her marks resulted in a nearly straight "A" average during her school career. But despite this high grade point average, Katja's citizenship marks are variable. Her scores on the standardized measures of achievement and ability given during the testing program would indicate, as do her grades, that she is one of the most able young people in our superior population. Reading scores on the *California Advanced Reading Test* were consistently at "the top" of the test. For example, in both vocabulary and comprehension she could easily work, as an entering high school freshman, at the college sophomore level. Other measures to assess intellectual development--the *California Mental Maturity Test* and the *Differential Aptitude Tests* given in the ninth, as well as the *National Merit Scholarship Qualifying Test* from the eleventh grade--all place her within the top one or two percent of her age group. Only on the *Critical Thinking Test, Form G*, did her scores fall to the mean of our superior population (perhaps because during early childhood she spoke another language). But whatever the reason for the one lowered score,* she still does very well in mathematics and science, subjects that are often quite difficult for those who do not score quite high on this test.

Katja's motivation to learn and her openness to psychological growth are unusually high if we judge by self-description and test scores. At the outset she classified herself as a creative intellectual on the *Student Profile*

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*As might be expected, with many students we find that their scores on one or two standardized measures do not seem to "fit" the rest of their test pattern.

Check, as she did on two successive administrations of this same measure. On pre-tests for the OPI, A-V-L and SIS she tested approximately one standard deviation above the mean for the experimental group; at post-testing she had risen to almost two standard deviations above the experimental group mean. Her scores on these measures (indicating creative intellectual attitudes, interests and values) were even higher a year later and she was proportionally further above the mean than before.

Katja tested quite low on the Humanitarian-Altruism Scale, somewhat below the mean of the experimental group. In other words, she indicates lack of concern for other people and an unwillingness to join in social action aimed at rectifying human ills. Her creative interests, notwithstanding, Katja tested at approximately the mean on the pretests of the Rokeach Dogmatism Scale and Rigidity Scale.* Nevertheless, by the time the post-tests for these measures were given, her scores had dropped markedly and she was well below the mean for our group in both dogmatism and rigidity.

On two other measures, the Acceptance of Women Scale and Self-Actualization in Women, Katja scored very high. As was mentioned previously, she had consistently described herself as creative intellectual on the Student Profile Check. All these measures taken together indicate that she definitely accepted the creative intellectual style as a desirable attribute for women, herself included.

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*Students who test high on these other measures (OPI, A-V-L, SIS) usually are also less dogmatic and rigid in their thinking than others, but Katja's highly developed "sense of destiny"--the idea that an individual can and should make a difference in his society--as well as her idealism and strong commitment (these items are scored as signs of rigidity and dogmatism) nullified any open-mindedness that may otherwise have shown.

Psychological Dimensions--The Contemplative Mind: From the time she was very young Katja was often lost in deep thought about very large questions. One of her first memories is of contemplating the universe. She remembers sitting at the window in the family apartment before she entered kindergarten and thinking--

> about the universe and what is life and what I was really. I used to have horrible nightmares about what was I--really. It's vague. People just don't understand the idea of Being. But then I would think--well, this is the universe. I had ideas--not a theory, and I knew it wasn't right. When I was about four years old I thought all the stars were holes punched by giants or something so that the rays of light would come in and they could look down on us and see what we were doing. This was the idea of God, you know. He was watching down on us. It was complex and vague and fascinating. Then I would think about myself. I felt that I could vanish the next day and I wouldn't ever know who I am-- a terrible sense of insecurity. But parents help. You need your parents. Often you realize that you're actually nothing, but to them you're something. It gives you an identity. Sometimes when I'm in a crowd or a big city I don't like it because I feel I am lost there. I can't be me. I always want to be recognized and I want to recognize other people, and really feel I am part of something.

Books undoubtedly helped Katja enlarge her universe. As she remarked,

> I've always read a lot. I learned to read by reading comics. And I kept on reading them. I would be reading advanced material or an adult novel and then put it aside and turn to a comic book. This went on till I was about ten. Comic books somehow make you want to read something better. They give you the stimulus to read and help to make for that connection that this whole world of reading brings to you.
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> Lately I've been reading Hemingway, Steinbeck and Faulkner; I like Faulkner a lot. And Ayn Rand--I enjoy her, the extreme individualism! I've been reading books on architecture by architects. I've been reading anthropology and once in a while I'll pick up a novel and skip through that.

Katja feels she gets a great deal out of studying an area in depth, remarking,

> I'll have to admit that I resent spending so much time on school work since I like to read, and I learn so much through reading. However, I do it and often when I get started I'll get involved in it, so I do a much more complete project. When I get involved I always want to do my very best. I always do. I am a perfectionist when it comes to serious things like reports; but in my room or doing housework, I just don't care. I really never want to do anything simple. I don't think you learn on a simple project; you tend to do it mechanically. If you're going to spend some time on a paper anyway, you should make it worthwhile.

When asked how she felt about high school, Katja replied, "I feel it is necessary to have a broad background. But I also know I won't do everything on my own. So I take science in high school; that's something I just wouldn't study by myself. In fact, I am majoring in science and mathematics." She thinks that America has obtained her world position through technology and that we are entering into an era where such developments may be even more important. Thus she feels it is necessary for her to have a background in science and mathematics--this is vital preparation for anyone who is planning to live in the larger world. Katja confesses she would not prepare herself adequately in these areas on her own, however: "I'm not that interested." But art, literature, architecture--"these are different matters; I lose myself over and over as I read and as I dream. These are the stuff for dreams." Reflecting on reality, she sighs, "But you do have to know math and physics to become an architect. I feel I must take these courses and then, too, my parents told me to."

The Inquiring Mind: Katja strongly feels that she is responsible for her education. True excellence and a kind of polished perfection can only come after the requirements of the school are met and she sees this endeavor as her own personal responsibility. This may be partly due to her feelings that teachers cannot quite be trusted. As she sees the relationship with a teacher:

> You can't be too close or too open with each other because that person is still the teacher and still a person--still a human being that has authority over you. Sometimes they forget what they stand for and will use it against you. You can't seriously argue with a teacher or they will take it out on you. I usually think about my grade first. Perhaps I shouldn't.

Katja is critical of the school as well:

> School is mainly to teach you what society wants you to know. You aren't (except in some creative subjects) necessarily to evolve as an individual. They don't give you a chance, often, to do anything original. They know what they want to teach you, period. Personally, I don't like a lot of rules or just memorization. My solution is to make my projects satisfactory in the bare essentials, no more, but then I'll get to wanting something more for myself. And I'll do it my own way--the hard way. This part gets complex and involved but it's for my own personal satisfaction and not for the teacher or for the grade.

But life extends far beyond the teacher and the school--her intellectual interests are wide-ranging:

> I like to discuss anything. I like to discuss books we have read or ideas. Something that we can really communicate and I can feel the idea that we are communicating. You don't really get this sense by talking about clothes or what you have.

The Humane Sentiments: Katja combines toughness and tenderness in an unusual way, and as a result is something less than a "creature of social concern." Quite different from most adolescent girls, she says, for example, that she usually does not "think too much about people. I know that during the eighth grade I had friends but I didn't go to their house and they didn't come to mine and I was happy." Perhaps this habit of standing apart from others is self protection, but Katja says she prefers it that way. Her distrust of teachers extends to people generally. She feels that most young people are not quite honest with one another, and "friendship seems to be a matter of convenience." Large groups bother her particularly: "I've never been able to get along with that many people."

Some of Katja's strongest feelings are reserved for animals, although she does have a warm and secure relationship with both her brother and her parents. As she describes the situation, "I think I am still a little girl. I love little kittens and that is certainly emotional."

Neither Katja nor her family go out of their way to help others, although they all would offer aid if an obvious need arises. She feels that she has been able to lift herself and that others should be able to do the same. Her preference is to spend her energy on herself, not on the underdog. In words and being she stresses the aphorism, "Live and let live."

Katja describes the typical person as a "conformist who has been forced into a position of disinterest by the pressures of a too-populous society--disillusioned by the loss of his individuality in the midst of too many people." This situation causes the individual to be afraid of new experiences, "unwilling and helpless to release himself from the treadmill of his boring existence." She believes intellectuals are generally more disillusioned than the typical person since, with their higher ideals, they are even less apt to be satisfied with the status quo. Her own personal fear is that the population explosion will magnify problems in other difficult areas, e.g., racial discrimination and education, and she hopes that birth control pills will supply the needed curb.

Independent Stance: Katja has always been at the top of her class. She likes it that way and works to keep her position intact, for she feels that this puts her in a particularly advantageous spot and gives her freedom to exert her independence from time to time. Katja likes to work by herself. As she says,

> I haven't wanted to become incorporated into a larger group nor to become part of something else. I want to be and am--just me. Being at the top of the class, I have been left alone; this always happens. And you know, I haven't felt a lot of resentment. Of course, I don't say to the kids, "I know this and you don't"; I just don't do that. And I don't tell them my grades. My brother does, though.

Later she reflected, "Maybe the other kids don't think too well of me but I don't really care. Personally, I like being a little different, and being Hungarian helps a little."

Katja claims, however, that all this discussion was a little beside the point:

> I don't usually think too much about people. My brother is a great expert on how I should change to get along with other people. But whether I do or not depends on the other person, in the first place. If they can take me as I am, fine, but I'm not going to change for them.
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> You see, I am different in that I am by myself and I am content and satisfied to be by myself. I prefer being by myself. The average person doesn't like this. He has to have people around him: a false sense of security! I think being alone helps establish your individuality. But if you can find someone you can really talk to or communicate with, it is completely different from the social relationships you have with so many people. These are superficial and they don't really mean anything.

It was noted earlier that Katja believes she has had more freedom in her childhood than many children. In her view, this has been good. As she recalls the situation: "I don't remember that my parents ever made me do something that I didn't want to do, really. Mainly, I've been left on my own and have been really independent."

Katja describes her room at home as "definitely mine." She continues,

> My parents will come in there and if it's messy--and it is very, very messy and I want it that way; I feel at home in it--they will talk about cleaning it up and making it their image, you know, of a nice room. But they don't bother me that much and I just don't do what they want me to do. It is my room and there's no disputing that, because it is mine.

Katja has reflected many times that solitude must be the refuge of genius. She does not claim such status for herself but she still likes to discuss those who are recognized as great, and admires their persistence and independence. She comments,

> As far as I know, those with great ideas have always found great resistance to their theories. And yet these theories are not without flaws; there is always something wrong with them. But the point was they stood up for these theories in such a way that people came to overlook the little faults and see the really crucial point at the heart of the theory.

Sense of Destiny: It has been said that if modern man is to be persuaded to put forth the intense effort required to change chaos into order, he must feel that he has the necessary stature or at least the potentialities for the assignment. But such expenditure of self is difficult unless there is an exuberance, even an over-abundance of spirit and a limitless pile of unreleased energy. Katja not only seems to have indomitable drives to achieve but a kind of inner fountain of joy, a self-replenishing and eternal spring. Her comment is, "I usually feel like laughing or jumping in the air, not crying." In addition, she feels her background has prepared her well for the demands of a life of noteworthy achievement:

> I think it is an advantage that our parents are Hungarian. This gives us a broader outlook on the world--we are not just American; we belong to another part of the world, too. We speak Hungarian and German and that way languages are easy for us. I've done very well in French and Latin. Also, I find that in another language, there are different words and pictures that come to your mind, and I

> think this makes the world broader and you communicate better. Knowing languages even helps me in my math; I seem to be able to move from one symbolic organization to another.

Both parents have contributed to Katja's high aspiration, but she seems to have little doubt but that she can surpass them in actual achievement. Katja reports the following conversation with her mother who is a nurse:

> I asked her, "What would you say if I became a doctor or a nurse?" and she said, "Well, a doctor will be all right, but don't be a nurse." She doesn't recommend it. But my mother didn't have enough brains to go to college.

The father went to a Hungarian university and taught college preparatory students. Katja calls him a semi-intellectual who

> likes to think about things--officially. He has ideas on just about everything, you know, but he doesn't go all the way and give his life to the pursuit of an idea or ideas.

He has communicated a sense of superiority to his children, however, the idea that their European background offers something Americans do not have. He respects the industrial supremacy--the power and the money--in America but he does not respect the intellectual culture. He says, "It is doubtful if Americans have this kind of culture, really, the way Europe and Asia have and South America."

Katja describes herself as having, from the time she was very young, a compelling desire to do things--to take on the world, if necessary. Her family had told her that when she first tried to walk, for example, she often could not stand up and would fall over, but that even this did not deter her. As she recalls, "I would just stand there and bawl and keep on trying until I did it." She soon began to try to be not only different from others, but also the best. She remembers that even though her artistic efforts in the first grade were probably at a low level they received commendation from the teacher. The effort and attitude seemed to be the important variables:

> I wanted to do something original. I enjoyed art. I tried to make it better than anyone else's, or more original or more startling. I've always wanted people to take notice--this was conscious, I must admit.

In junior high and high school her need to achieve has continued:

> I always want to do my very best. And I want that to be very, very good. I'm afraid I'm a perfectionist. I will do things I don't like to do and things that are boring if I see that they are necessary for some goal I have in mind. Usually this is for my own personal satisfaction.

Katja has had an almost unfaltering confidence in herself since she was very young, and developed an early awareness of this self esteem:

> In the fifth grade I had a very nice teacher--I was sort of the teacher's pet--and I would take over the class when she took coffee breaks; this went on in the sixth grade, too. I took over the class and she encouraged me. She encouraged my art; all the teachers have done this. I became more confident of myself; I don't think it was so noticeable before. Ever since then, friends have told me, "You're too confident of yourself." I don't know if they are right or wrong, but I imagine there is some truth in it. Once I couldn't make up my mind, and my teacher said I should hurry because I knew what I wanted. That helped me to a great extent. Even if I do the wrong thing, I thought it was the right thing at the time and the important thing is what I think, not what anyone else thinks.

> "It is in the sphere of moral courage that the arts are called upon to exert their most vital function--that of asking questions eloquently."
>
> Peter Ustinov

Don Saxon--Romantic Rebel

The young creative intellectual who has chosen (or had thrust upon him by his inner nature) the aesthetic patterns of search for meaning is often the most alienated among able youth. This sense of despair with the human condition and with the lack of dependable order in human affairs has been apparent among certain of the intelligentsia for a long time. Brinton observes that ever since the French Revolution writers, artists and musicians have despaired and many have lost faith in their fellow men. He continues, saying that they were distressed not with materialism but with the quality of life led. In addition, they objected to the "self esteem" of nationalism, the vulgarity of "conspicuous consumption," the "sound, fury, and intellectual dishonesty of politics, [and] the great lies of advertising."[59] Yet as Brinton asserts, society needs the support of this group.

The old literary and artistic forms which exaggerated the human condition upward have been rejected by the young aesthetics. More violent, detached and profoundly despairing than the romantic rebels (Wordsworth, Keats, Hugo, Whitman, _et al_.) of the late 18th and early 19th centuries, they remain in this tradition. They are fascinated with the remote in space and time, with the dramatic and violent, and with the melancholy and terrible. They reject the world as it is and as it has been and they rebel against the social, intellectual and aesthetic standards of their time. Above all, they are repelled by scientific mechanism and determinism and seek to affirm the superiority of intuition and the immediate perceptive experience. For them, reason is dead. They may see this as a tragedy but they also hold it to be a truth. Thus they feel drawn to Whitehead's "process" philosophy, existentialism's "moment of decisive choice," the "stream of consciousness" method of novelists, and the aesthetic of abstract and expressionist art. At times they subscribe to what has been called "The Rhetoric of the Absurd."

Of all young people who fall within the broad definition of creative intellectualism, this group is most uncomfortable with adult accommodation. They are truly disengaged from the values of their parents and teachers. They feel adults have handled life inadequately and irrelevantly and have not been sufficiently responsible. As Goodman describes it, their view of adult society is of "an apparently closed room with a rat race going on in the middle."[60]

But despite expressions of disinvolvement, this group of gifted young people care intensely and they seek through their reading to find examples of authenticity and concern. Thus they find Catcher in the Rye, which offers no adult models suitable for emulation, a book which respects the mind and the creative imagination. Here is an effort to show youth not as an object or a thing but as flesh and blood and feelings and to reveal what at least one young man, Holden Caulfield, inwardly feels himself to be.

Description and Family Background: Don is an attractive, tall, blond boy with a well-developed, athletic body. He tends to be negligent about his grooming, but a very mature demeanor--as well as character--offsets this fact. Charming and loquacious, Don was anxious to talk about anything from the most intimate and personal to the universal. Though undisciplined in his thinking, he exhibits a tremendous maturity and insight concerning life. He is genuinely affected by almost all aspects of life and has a great capacity for feeling--for empathy--though he denies being in any respect a humanitarian. His discussion was flowing and spontaneous, and always original--he never relied on clichés; however, he made refreshing use of slang. Don is the type of person who is constantly searching, constantly yearning and learning, but he feels that he still is lost.*

Don is the youngest child of a large, chaotic, fatherless, Roman Catholic family. He was born in Arkansas, but moved to Lansing with his family when he was two. At this time his parents were permanently separated, leaving the mother alone with four girls and three boys. Don's exceptional memory reaches back to his days in Arkansas when "we used to go up and down the railroad tracks and collect iron for a penny a pound and bones for two cents a pound. You made maybe twenty-five cents a day--but I guess that's all we had to do." Since then his family has remained in Lansing, Michigan, although one could not say that they have become settled. As a ninth grader, Don casually remarked, "I think I've lived in about twelve different houses in Lansing, Michigan."

When Don describes his family they emerge as bizarre as the renowned Glass family. His brothers and sisters range from ages 17 to 30, but "Nobody in my family is married. I wish they would get married so I could go over to their houses and eat." His observations led him to report, "my brothers aren't superior but my sisters are, as a rule, pretty intelligent." He goes on to describe these sisters as follows: "Recently my sister (27 years old) had what is popularly known as a nervous breakdown and spent some time in a California state hospital. The others? One is a nun, another is considered insane, the other one likes to think but is so politically oriented she can't think. That's the trouble with our family; we go off--we're zealots." Don describes his mother as "a character" and "nurturant." Apparently she is an intelligent and whimsical woman who has fleeting interests in the arts, is always reading and has a supportive but non-restrictive relationship with Don. When asked what values or aspirations his mother had encouraged, Don somewhat sardonically replied, "Grow up, learn something, get rich, and support me."

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*Those of us who know him predict--a dangerous activity; we acknowledge--that he will someday be a great man who has tremendous impact on the world of thought, or he will be a man perpetually lost in the existential vacuum.

Don has always enjoyed an extraordinary amount of personal freedom. As a young child he "used to run out and play in the traffic; that was my game. The only object was to run across the street as many times as you could before the next car. I was hit by a car; it really wasn't too intelligent." He occasionally regrets his lack of paternal guidance and says, "I never had a father to restrain me, so I would just run amuck." As a ninth grader he flirted with the dangerous and illegal--minor shoplifting, moving automobiles, and other delinquent offenses. However, during the tenth grade he referred himself to the Guidance Clinic--and seemed to find some support and guidance. He recently reported that he was developing a "practical conscience."

Because Don's family moved so often within the city, he changed schools frequently. During his elementary years he attended five different schools--some private and some parochial. Such shifts didn't seem to impair his intellectual development; he was aware of his superiority from the beginning.

> The first grade, we had a spelling bee. Oh, I was great! Oh, I mean I was astounding! I was taking on fourth graders and whomping them into the ground. Only finally I got stuck on "friend." "Friend" in the first grade. What the heck! I could spell hippopotamus when I was four--but now I can't.

Don was reading, in fact, before he began school: "I wasn't reading Plato and any of that stuff, but I was reading prayer books and stuff. And I was reading 'General Electric' on the refrigerator." Although he remembers himself as "basically uncooperative," he did excel in school. "All the time I got A's. Nothing happened until fifth grade, then I started thinking, 'What good is it doing me--working so hard to get good grades when they don't even count?' so I stopped. Laid off until the ninth grade." Although he now intends to raise his grade point in order to gain admittance to college, Don's not enthusiastic about joining the ranks of honor students. "What really gets me is those honor assemblies," he exclaims. "All these stupid people. That, that really fractures me. There are people I know who can't even spell or read or write, and they have something like a 3.917."

Psychological Assessment: Although Don was one of the most intellectually aware, well read and fluently conversant boys in the study, his school performance has seldom given evidence of this. At the end of the ninth grade he had a "B-" average, but his scores from standardized tests would indicate that he actually has much greater ability. On the California Advanced Reading Test, for example, he scored near the test's upper limits. In addition, he was one standard deviation above the mean for the total ninth grade superior population on both the California Mental Maturity Test and the Differential Aptitude Test, i.e., well within the top five percent of the general population in intelligence. Unlike the majority of our experimental students, Don did not take the National Merit Qualifying Test--offered to all qualified students "to discover exceptionally talented young people, and encouraging them to obtain a college education." He was considerably above the mean for our superior population on another measure, the ACE Critical Thinking Test, Form G, on both occasions that he took this test.

On each test administration Don classified himself as a creative intellectual on the Student Profile Check. His performance on the various tests assessing attitude correlates to creativity shifted from one testing period to the next, however, and was less consistent than on those standardized tests which have just been discussed. At pre-testing on the OPI he was one standard deviation above the mean on five scales, and also tested extremely high on the Aesthetic and Theoretical scales of the A-V-L. On the Creative Intellectual Scale of the SIS he was at least 15 points higher than on either the Studious Scale or Social Leader Scale of this test.

However, at post-testing Don showed a marked decline in creative intellectual values on the three instruments (OPI, A-V-L and SIS). His OPI scores fell to the group mean and his highest scale score on the SIS became the Social Leader Scale--reflective of values and behavior antithetical to those intrinsic to the special program and to those he had demonstrated at pre-testing.*

Don's tests show little concern for mankind taken as a whole: in fact, on the Humanitarian-Altruism Scale he received one of the ten lowest scores in the entire study. His scores on the Rokeach Dogmatism Scale and Rigidity Scale were at the mean for our experimental population. On the Acceptance of Women Scale he was several points below the group mean at both pre- and post-testing, although he ranked somewhat higher on the second test administration than the first. His low score on this scale would indicate little acceptance of independent and career-minded women, yet on the Self-Actualization in Women Scale he saw his own future wife (both real and ideal, during the pre- as well as the post-testing) as fitting the description of the Level 3 girl--a girl who wants to graduate from college and perhaps attend graduate school, and who hopes to contribute something to the wider world. Thus although Don is skeptical about the potentialities for creative activities and professional endeavors in most women (at least as determined by the _Acceptance of Women Scale_), he does expect a high degree of intellectual development from his own wife and probably also from other females who are his close friends.

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*These resistances to the values expressed in the course seem to have mainly been short-lived, however. A few months later when he was interviewed he indicated high interest in ideas and aesthetic concerns. Perhaps it is only when the school supports these values that they become unpalatable to students like Don.

Although Don didn't report for Phase II of the testing program, he still maintained some contact with the individuals who had set up the experimental course and indicated an interest in the educational directions which it had taken. He called the project director several times to discuss his test scores, asking that she send recommendations, based on her knowledge of him, to his school counselor and to the director of a summer session which was to be conducted at an Eastern preparatory school.

Psychological Dimensions--The Contemplative Mind: Don reads and thinks seriously and at length about the ideas he encounters--and his concern is with qualities of mind and character rather than specific information. By the end of the ninth grade his reading ventures would have done credit to the best of college students:

> I read Plato, Sophocles, Aristophanes, and Aristotle. I usually read about a series of four things. Right now I am reading the _Origin of Species_, the _Communist Manifesto_, _Utilitarianism_ and something else. . . . We have a lot of books in the house. I read a Bertrand Russell book--as I read his things I began to see that you should respect truth above everything else--I was knocked out when someone stole the book. That man really speaks his mind.

Don's adventures of the mind extend beyond contemplation; he not only examines various issues but also spends a great deal of time developing logical arguments, either for or against a particular idea. "I've taken on a new interest in critical analysis," he once remarked. This critical eye relentlessly observes the social order and finds little to praise. "Through the years, it has been my experience . . . that most people are not rational at all."

The Open Mind: Don is sensitively aware of and responsive to ideas of many kinds:

> I once belonged to the Catholic Church. I went for reasons unknown, but mostly because of family commitments. I began to read things, see, and I began to see the picture a little better. I read something by Thomas Aquinas--something that's as biased as it can be--on the belief in God, and I read a lot of other things. I read things by B. Russell, and I began to see that you should respect truth. I'm not an atheist; I'm more unitarian than anything else. I believe that I'm right and that they are probably wrong. But if they want to believe, that's all right with me. I don't go along with these guys who shout that they don't believe in God. People believe in God because it answers a lot of unanswerable questions for them.
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> I believe that God was something that people made up when they were too tired or too confused to find out what really happened. Darwin was a worker. He would go back, find, trace, and work to find out if he could get a logical basis for belief. But these people just, well, believe.

Although he disavows all inclinations toward altruism he feels there is much to be valued in many kinds of people, for example: "A lot of people who are classified as insane and retarded have a great capacity for feeling." He continues:

> There are obvious wrongs being done to minority groups. People don't have a right to kill other people or make jokes out of other people. I don't even want to talk about it. It's not a question of minority groups. It is a matter of wrongs being done to people.

The Inquiring Mind: Don, like most gifted adolescents, has a consuming interest in education. In all of our contacts with him he talked fluently about the content of education, the teachers, the teaching process and the grading system. From his observations he concludes that schools may be a poor way to get an education. "The most meaningful thing I've heard is that education may occur least often in the classroom . . . the least valuable thing is formal education." He has even thought about teaching children himself--in ways that he "would have liked to have been taught." On books:

> All parts of education should complement each other. Textbooks should be written well: literature should go along with history; social science should be concerned with chemistry. Everything should go together. Most texts are stupidly written. History books should include more of the contemporary world. Science books should be revised every year--science is the most greatly changing field there is.

On teachers:

> We need a new crop. What we need is people who vibrate knowledge...teacher philosophers. People who create things! Capital E--Empathy; capital T--Truth; capital L--Love. The teachers should believe in something and vibrate this. They should be so damned interested in what they are teaching that it catches on. You can't be phony about it.
>
> People aren't good educators just because they are postgraduates from Columbia--the ones who think they're god. I don't dig them. There's a quality in man, and I guess that quality is humility, and not enough teachers have it.
>
> Teachers should try to talk to kids in such a manner that the kid'll feel free to communicate. The most stupid thing is when teachers say, "If you don't understand something, come up and ask me." You don't tell someone to feel free. They either are or they aren't.

On grades:

> A lot of things are wrong with education--I'm going to blast you education people. You don't learn as much as you could by the present system.

> I'm so anti-grading system that I can hardly talk about it. It classifies students--it doesn't make them feel as equal learners. It makes them feel as equal achievers to the stupid standards which don't indicate high levels of learning, only teacher satisfaction.
>
> The solution I believe requires a more intense study than is going on now--if we change the grading system it shouldn't be gradual because a lot of people are being hurt. A lot of people don't desire to please the teacher.
>
> In education you should compete with yourself. You should say, "I'm going to know 18,000 more things about this subject at the end of the course than I do now." What about casting away all standards and saying, "Here's a group of people--teach them."

The Humane Sentiments: Don tends to despair of human beings and their powers to help themselves. His pathology seems to be that he sees too much and sees too clearly. Even though his compassion is great it is generally reserved for individuals he knows and likes. At the end of the ninth grade he commented, "People are so glaaah, I...I...I can't even express my opinion of them. Not to the fullest extent. I just have no affection for them at all." This extreme position has modified somewhat during the two years we have known him, but he remains an idealist who has searched the philosophers for answers to universal questions: "What is the good life? What is friendship?" Both could be improved by "Empathy. It's very complex. Euripides said, 'True happiness lies in the enjoyment of one's self and the companionship of a few select friends!' John Donne said, 'Friendships should be reciprocal, or else bad imbalances occur.'"

The Independent Stance: Don feels that "The great tragedy of our time is that people don't get to do what they want to do." Earlier he had observed, "When you're young you can't do anything because you have to lead a scheduled life. Only during July and August can you lead your own life." He sees at least one version of his ideal existence as being a Thoreau-like withdrawal from the demoralization of social institutions: "If there was anywhere I would like to go, I'd like to go up into Canada and live. Get myself a cabin back in the nowheres, way out in the empties."

Forced, as he is, to stay here and face it all, he tends to be the silent antagonist and to resist rules and teachers' directions. He has mastered the fine art of passive resistance, and has a beautiful rationale to support it:

> I think you can learn more (consume more) getting worse grades, because when you get better grades you just take in a little bit of everything rather than delve into the most pertinent points.

In his early interviews there were times when this sense of independence reached heights of defiance that literally screamed hostility and destruction. He would reflect,

> It has been my experience that people weren't worth the time of day. They're greedy. You give them something good and they turn it into something evil. There's just one person you can rely on in this world and that is number one.

In later contacts we found him somewhat more hopeful about the society that he still termed "decadent." He felt, at least, that youth might find a way. But the young must remain independent and apart from the adults who are already lost souls: "When I get to be President, I'm going down to the high schools. That's where I'm going to get ideas. Young people are a lot more creative, and they think a lot more than these old factory workers. That's what I'll do." And yet he will not probably turn to the teen cult for the direction of man's evolvement:

> I don't have the gang spirit . . . [it's] so nauseating. There's nothing complex about it. It's all the same--no difference between any of them. I can't see it.

The larger society remains a negative force, protecting itself and never freeing the individual:

> It's not out to do any good, if you ask me. Ever since the beginning of earth societies have come and gone. They started out bad and they ended up worse. Other societies have taken over and continued oppression. That's the way it happens. A society has never really helped anything; it's always been an individual.

The Aesthetic Orientation: Don is, in almost all respects, the intuitive artist--endlessly self aware and perpetually floundering as he tries to find direction, yet with the observer's eye out for beauty of phrase or accuracy of characterization. He identifies with Holden Caulfield in Catcher in the Rye, and at the same time sees the book as a work of art:

> He reminds me a lot of me. The last page, that's what does it. That's all I'm going to tell you about it. He tells me what street I'm supposed to go to and he says, "I'll show you after I get out of here." The last page--that's cool. That's really a great ending--that really smashed me.

Don has also carefully considered and defined beauty:

> Anything that is natural is beautiful and anything that is unnatural is ugly. This doesn't exclude man-made things; if things are made with some kind of idea in mind, then they become natural. The thing that really knocks me out are things that have stayed the same for years--like rock formations. The Grand Canyon would knock me out if it weren't cluttered with beer cans. Just one beer can can spoil it all!

He tends to follow his intuitions and to be caught by passions. Although he had written some poetry he was not really won over to the art form until the summer before he entered senior high school: "I started to read Keats and I have been reading that guy like crazy this summer. I was telling myself I was going to learn to type and to learn German, but all I've been doing is reading."

Don seems to feel that beauty is a great and often unmet need in the life of modern man:

> People respond to beauty nowadays a lot more because they have to contend with so many ugly things like war, politics, strikes, riots, like that. They freshen when they see something that isn't ugly, but then they go back to their homes and forget all about the beauty they've seen. That's the way people are.

Sense of Destiny: Again and again Don refers, with all seriousness, to what he will do "when I am President." But almost in the next breath he seems to remember the perfidy of human beings and that they are not worth the effort: "I wouldn't want to do this to myself. I'm content to be a decadent American--it's a crummy thing to say. People I try to help resent me to such an extent that I just don't try any more." At times such thoughts bring him to visions of mass destruction followed by suicide: "It would be a spectacular." In his first interview he spoke of a daydream--waiting for a crowd of people to appear as he stood on a ledge, armed with six grenades that he had stolen from an armory. "Then I would just dive on the pile, you know." Such comments were much more frequent in our early encounters with him, before his self-referral to the guidance clinic and the arduous task of trying to get himself in hand.

Although despair was intense and apparent in all of our contacts with him, it was often short-lived. His capacity for joy, his desire for omnipotence, and his need to use his superabundant resources would return him to visions of self-fulfillment and a sense of destiny: "I like to think that everything I do...contributes to the world, to the cultural scene. . . . It's important to do what you want to do." But Don still realizes and accepts limits: "One person can't change the world, and no one group of people can change the world. The thing to do is to change your own environment to your own specifications."

His modesty is not pronounced. In the first interview he proclaimed, "Ever since I was a young lad I had this superiority complex." A year later he continued to talk about the fact that he likes to be different. He admires people who have purpose and who "stand by their convictions."

His interests seem to know no bounds. Asked what he wanted to do with his life, he replied:

> It's a mixture of umpteen desires. I would like to write; I would like to be a folk singer; I would like to be a lit teacher; I would like to be a psychologist; I would like to be a psychoanalyst; I would like to be a wrestling coach; I would like to be a farmer; I would like to be a postman. No, I don't want to do everything. I don't want to work in a factory.

Indian Proverb: "It isn't how
much one can do, but how much
he cares!"

Jane Addams--Humanitarian-Altruist

The creative intellectual is by definition concerned with ideas and with creative change and those among this group that approach the higher levels of development, i.e., self-actualization, feel that this change must be in directions that benefit all mankind. In answering the question: "Why are we on this earth and how can we make the most of ourselves and the life we are given to live?" they feel the response must be in terms of social as well as personal needs. More than most creative intellectuals, they idealize the individual and extol his "natural" talents. They have a strong sense of social ethics which they insist on applying in direct ways to bring about the fulfillment of individual or social progress. This is a view stated clearly by Condorcet: " . . . man is a sentient being, capable of reasoning and acquiring moral ideas."[61] For these 18th and 19th century visionaries the perfectability of man was indefinite and could come about if we could dispel inequalities in education, religion and inherited wealth.

The reformers in the human realm are apt to show a burning zeal and to detest hypocrisy. Jane Addams, although well born and well educated, was willing to live in the slums of Chicago and to ride the garbage trucks to battle the Ward Boss.[62] Similarly, Gandhi and--to an extent--Eleanor Roosevelt were able to reach the people by living and working with them--at great personal sacrifice, if necessary. Such great humanitarians have realized that human relationships are highly complex and that many problems and inequities have not been resolved, but they feel that each individual should assume responsibilities for his fellow man.

This group have not rejected religion, but have disregarded the dogma that may stand in the way of genuine spiritual experience or truly religious and saintly ways of living. (They do not readily accept the definition of religion as a binding to vows, but prefer to inquire deeply into the nature of man's need for religion.) For them, it is not the larger ideals that are false but rather the "set" versions of the truth.

Description and Family Background: Jane is a slender, dark-haired girl who was described by one interviewer as "a girl with twinkling eyes and a sparkling personality, [who] probably would not conform to the teenage ideal of beauty, but is, nevertheless, a rather pretty girl." In the classroom this animation was not so apparent since she usually read books during discussions (she is a chain reader with a book almost always in hand) and rarely had anything to say. Her comments that she felt apart from the teenage society and preferred either adults or children seemed to be borne out by the behavior we witnessed, first in the adolescent group in the classroom and later in the one-to-one interview situation where a young adult devoted exclusive attention to her. In this latter situation she is reported as "uninhibited, somewhat rambunctious, a merry tomboy who had just recently arrived in adolescence, who had not bothered to celebrate the event by taking on the customary early teenage affectations of a cool, detached manner, poorly applied eye makeup, and air of boredom with adult society and affairs."

Jane's family has been described as chaotic; her mother is now married for the third time and there are two young sisters. When Jane discusses her father and family, she is referring to her newest stepfather and her little stepsisters. Always there has been an extended family and many of Jane's most vivid memories are of her pre-teen years when she and her mother lived with the mother's parents. The grandfather was then and has remained the strongest influence in her life. He is a man with many enthusiasms, a strong appetite for living and indomitable good humor. Jane has adopted many of his values and his intellectual interests, and tries to emulate him in a variety of ways. He likes to read, to contemplate the world, to talk with all kinds of people and enjoys having his granddaughter with him. Jane, in turn, enjoys reading, philosophy, people and being with her grandfather. As a result, she often spends long afternoons in bars and other public places with her grandfather and his friends and has thoroughly enjoyed the experience. The grandmother, a proofreader for the city's one newspaper (and precise in other ways), has never quite approved of her gregarious and loquacious husband nor of his desire to share his world with their eldest granddaughter. The grandmother has also been a little appalled by the mother's marital shifts. Jane describes the grandfather as on the move, impractical and "very, very tenderhearted," in contrast to the grandmother whom she sees as sensible, practical and sedentary. The impractical grandfather is the one who is concerned not only about the state of the world but about people as well. Jane reports that he sold real estate until he just couldn't stand selling people what they couldn't afford any more. The granddaughter reflects this tenderhearted attitude in her own statement:

> I want to help the world all I can (the people in it, I mean). Most people are too involved in their own lives. They should talk to each other and they should listen. Sometimes you have to compromise before you can really accomplish anything.

Jane has few friends her own age and does not particularly enjoy teen-talk, but she is more philosophical than critical when she contemplates the adolescent culture. She reports: "I get along fine when I'm with a group of teenagers. I don't feel that they are lower than me; you just have to remember to adjust to a different kind of talk. It's just like when you're with children--you have to adjust." She has no boyfriends but is not uninterested in the opposite sex. What she wants is a different kind of relationship than the usual dating paradigm where there is either no talk or where conversation focusses on cars or sports. As Jane says, "There's nothing I hate more than to go out and talk about hot-rods all evening. This is a problem at school." She has capitulated to the general cultural demand that a boyfriend be as smart or smarter than the girl he dates even though she had agreed, on the Acceptance of Women Scale, that half of the women are brighter than half of the men. But Jane, as all other able girls in the study, dreams: "I want a boyfriend to be as intelligent or more intelligent than I. I like someone who has read a little bit and who can talk about things." She also wants him to be concerned with social problems and willing to work for social reform--as she is.

Jane would often prefer to spend her time with children instead of with adolescents. One of the reasons that children appeal to her is that "they come out with some of the most fascinating statements and questions. Sometimes they almost seem wiser than adults even, and the questions they ask are always challenging. I have tried to answer every question, but sometimes I have to go to the library to find out myself."

Another of Jane's chief interests is folk music. She taught herself to play the guitar, and sometimes she composes her own songs. Her songs tend to reflect mature optimism concerning human destiny, and she has patterned herself after Woodie Guthrie: "You know, it is so beautiful the way that man thinks. Why, once when he was in the service a song came on the loud speaker called Born to Lose, so he immediately sat down and wrote one called Born to Win. I feel so very much like him." Jane also enjoys the solitude of the night, when she lies in her yard and stares up at the stars:

> Grandfather told me once about this bird that always flies--he lives almost his entire life in the air and just keeps flying. I try to see him at night but I never have. You know, I always think that there are many people like him who have escaped into their own little worlds and know nothing about the real one. Thinking of the bird, it seems awfully hard; but for people it is just too easy.

Psychological Assessment: Jane has always been a good student, achieving a 3.5 grade point on a 4-point scale during her freshman year in high school. The results on the *California Advanced Reading Test*, the *California Mental Maturity Test* and the *Differential Aptitude Test* from the ninth grade all indicated that she was of superior mental ability, somewhat above the mean of our superior experimental population. During her junior year she again tested at approximately the same level when given the *National Merit Scholarship Qualifying Test*: at the 95th percentile when compared to an unselected population. On the ACE *Critical Thinking Test, Form G*, she was approximately one standard deviation above the mean for her age group.

Jane described herself as a creative intellectual on the *Student Profile Check* each time the test was given, and scores on the *OPI*, *A-V-L* and *SIS* would indicate that her values and interests are oriented in this direction, also. She tested above the group mean on all scales which measured creative inclinations (*OPI* and *A-V-L*). She scored highest (approximately one standard deviation above the mean) on those measures reflecting openness and non-prejudicial attitudes; for example, the scales of *Originality* and *Complexity* from the *OPI*. She also scored at the very top of the group on the *Thinking Introversion* scale on the *OPI*. While all scales were above the mean, she was somewhat less interested in aesthetic expression and a theoretic ordering of knowledge than in the dimensions which have been mentioned previously: her lowest scores were on the scales assessing theoretical orientation and aestheticism on the OPI and the Theoretical scale of the A-V-L. On the SIS she scored very high on the Creative Intellectual Scale, being much more oriented in this direction than toward either the Studious Scale or the Social Leader Scale.

Jane ranked near the top of our experimental group on the Humanitarian-Altruism Scale, thus reflecting a deep concern for people that she would be willing to translate into social action. Her extremely low scores on the Rokeach Dogmatism Scale and Rigidity Scale would seem to indicate that she was also not set or close-minded in her beliefs. She received quite high scores on the Self-Actualization in Women instrument--about one standard deviation above the mean--and her self-description on the Acceptance of Women Scale, both actual and ideal, placed her within that group of women who want to develop their creative potential to the fullest.

Psychological Dimensions--The Contemplative Mind: Jane has been an amazingly confident and self-sufficient girl, quite aware of her abilities from early childhood. "It was in the second grade that I started getting good grades in school. I just decided that I was going to be one of the best kids in the class. That's very easy if you make up your mind to it." She has always liked to think about ideas "and I write the important ones down in a little notebook I keep." This interest in contemplation extended to the examination of issues and a desire to "question almost anything and try to find the logic behind it." She accepts the basic tenets of the Catholic Church in which she was raised but questions certain mandates.

In her first interview she reflected:

> I don't think my catechism teacher liked me very well. She was going to prove to us that the Catholic

> Church was the only church, you know. And I was speaking for all the different religions because I felt that I didn't care what religion you believe in, just so you believe it. I don't really think it matters. Even the Indians, whom we call heathens: it's amazing that their religion is so much like ours. They used to have a sacred lady which is the Christian's Mary and all these different things that were so very much like ours.

Her memories a year later were similar:

> My poor catechism teacher. I had her so confused she couldn't even remember if there was a God or not. She tried to make us believe that the Catholic Church is the one true church. I think it's strange how so many people try to make religions different when they are really basically the same. But people who think and study do not seem to have to believe in any one particular religion. Even Lincoln said he believed in God, but not in an orthodox religion.
>
> I go to church every Sunday because it helps me not to forget. You need someone to look up to. People need a God; I feel that people have always needed a God. They're animals and even animals look up to something. But before people can really believe in something, I think they have to see why it is necessary.
>
> I have trouble accepting all the dogma of the Catholic Church. They feel that when women get married it is to raise a family. I don't agree with our Church on a lot of things and this idea is ridiculous. I'm in favor of birth control which the Church is against. I'd like to talk to people about this, but it is a taboo subject; most people just will not discuss it. I feel that planned parenthood is good.
>
> There are a lot of things against the Catholic Church with all its money and power. Religion is more or less a business, and like all businesses, you have to have the people pay the way.

Jane is similarly concerned about the relationship of man and machines. "There is a cartoon that I thought was very cute," she recalls. "It shows all these machines and there is this little glass enclosure and the sign says, 'Break in case of emergency.' Inside there is a man. The machines are completely dominant. Only in case of emergency do you release a man!" As Jane continued to reflect upon the dilemmas of contemporary society, she said: "I don't think people care enough about what's going on. . . . The laws are so ridiculous. They're outdated and they should be brought up to date; maybe it's good that we move slow but in some cases I think it hinders us."

The Open Mind: As was noted earlier, Jane has grown up under the wing of a liberal, gregarious and outspoken grandfather who talks to anyone and listens to everyone. She feels the whole world has touched her life rather than just particular people or a particular locality. She reflects on this pattern of learning:

> You have to look at what the other person is thinking, and put yourself in their position to really realize the things that are happening. The more you talk with people the more you see their point of view. I like to get their points of view, especially if they are broadminded.

She found that young people of her age often seem to lack such openness and that many don't even have a point of view. One of her more vivid memories is of a girl she met while in the hospital for a tonsillectomy, a girl who could not discuss nor even envision World War II. "I couldn't see how anybody could be that enclosed in her own world--that narrowminded."

Jane reads omnivorously and frankly admits that her outlook is frequently revised by what she reads. As she says, "The more I read, the more I understand and change my opinions." She finds that her opinions also broaden and are revised because she listens to other people's ideas. All of these sources she sees as influencing her views on life today--the population explosion, education, and her own existence.

There are areas, such as politics, where she has thought much more seriously than the average adolescent. "I want to go into politics. I want to become elected to an office . . . I want to be a favorite daughter." As a ninth grader, she was not yet sure of party affiliation, whether she would be liberal or conservative. "There are things that I'm liberal on and things I'm conservative on," she commented. After completing the tenth grade, however, she declared herself a Democrat: "I don't have enough money to be a conservative Republican!" This new stance has enlivened her dialogues with her grandfather considerably since he is a confirmed Republican.

Jane, as we have noted, has a wide range of interests. Many things lay claim to her time, including books and ideas, people and their problems. As a result, she has to plan her days carefully. "However," she says, "I don't plan them so carefully that I exclude the unexpected. I want to enjoy the unexpected and the unplanned, too."

The Inquiring Mind: In her childhood Jane spent most Saturdays with her grandfather, often taking long walks with him. As we have noted, he was interested in a wide range of things--politics, religion and human beings. "We used to talk about things which were happening," she reminisces. "I don't mean little things . . . but big things like the U-2 spy and events that were big news." Her grandfather seems to have helped her to look beyond the obvious to ask penetrating questions, to touch the limits of the universe and, as Jane saw it, "this way the whole world touched my life."

Jane particularly enjoyed the interviews which we conducted and assured the first interviewer that this approach was superior to tests as a way of finding out what a person is really like. On education she takes the view of the phenomenologist:

> Education means just about everything in life. You learn always; today you're smarter than yesterday. You walk down the street and see a bird fly, and you're different; you see some picture that strikes you: this is education. You learn to appreciate. Education is not just school.

Jane's eagerness to share the fruits of her education and wide-ranging inquiry result in such a flood of comments on her part that in her first interview the schedule was, for all intents and purposes, abandoned. She brought Dreiser's The Tycoon with her to the second interview. As she said, "I was walking past The Tycoon and I just happened to notice it, so I pulled it out. I just finished Hawaii; I believe in the philosophy of that book. All men are created equal and what all men do reflects on everyone else." The interviewer who worked with her this time (the summer after she had completed the tenth grade) reported with a sense of accomplishment that after two hours they had almost completed half the interview. "First she talked of books," he noted, "and then she became interested in the tape recorder, and with equal zest and enthusiasm, she discussed recorders. This was typical of her. She knows about many things, reads many magazines and books, and she loves to talk about them. These are, perhaps, her two outstanding characteristics--her liveliness and her breadth of knowledge. She talks intelligently about world peace, drop-outs, politics, Lincoln compared to Kennedy as a president, the Catholic Church, birth control, her family (she described them all), and welfare programs. She is filled with opinions and editorial comment on all of these; and she speaks with verve, wit, and good humor. Jane is well-informed, indeed, about the events of her world; and her world is not a small one--it is a very wide and exciting one."

The Humane Sentiments: Jane is, above all else, a humanitarian. If she does not go into politics she hopes to join the Peace Corps:

> I think that would be interesting because I have the feeling that the Corps touches much of the lives of other people, and yet the other people touch them. The more you are with people the more they change you and you change them.

She believes that what everyone does affects everyone else: "It makes me feel funny just thinking about it and just realizing how much power the average person has which he is not aware of."

Jane is convinced that you can find something good in everybody, and that cooperation and interaction will make the world a better place in which to live. These endeavors must be the responsibility of everyone: "Everybody must try to make the world a better place to live. We should try to make other people think."

She is also greatly concerned about man's relationships to man. "Responsibility is one of the big things to build up in a child," according to Jane. In her opinion, this can lead one to a better way of living a life, "Having done one thing for one person, no matter how small and having cared for someone and having someone care for you--that alone makes life worth living." But Jane does more than talk about caring. As a tenth grader she tutored unskilled workers every week in a training center set up to meet their educational needs. Her comment was, "These people are really quite intelligent and only need a chance." From such experiences she concludes that everyone should do as much as possible to help others.

Despite her soft heart and tender mind, Jane has toughness and resiliency. As she says, "I am the adult in my family. As a child--I was the only child then--all the adults would come to me to discuss their problems." Primarily she looked at these episodes with an amused detachment, and even tries to see the impending world holocaust in perspective: "After all, there has always been an ultimate weapon: The bow and arrow. Gun powder. Dynamite."

Polar personality traits are also exhibited when Jane contemplates human progress. She is elated by man's discoveries and yet despairs of his lack of progress in human realms. She comments:

> Sometimes I don't like man as a whole because people are not doing enough about the state of the world. Other times I think we're really making advances, and we're really striding forward so I can't say I dislike it or I don't dislike it. It just depends on the mood I'm in or what I'm thinking about at the time. I think emotions have a lot to do with what a lot of people think and feel, and I'm overemotional. I'm highly sensitive, which isn't easy sometimes and which is better sometimes. It depends. . . .

The Independent Stance: Jane considers herself to be forthright and independent and evidently likes these qualities--in herself and others. "I admire honesty in people. I like people who stand up for what they believe. Right, wrong, or indifferent, you should stand up for what you believe."

> My folks used to think that I had too much independence because, you know, I didn't want to be around them. And my mother was separated so I was alone all day, and I did whatever I wanted to and they felt that I had too much independence. I always remember that my grandfather told me if I wanted to do something terribly . . . even something he thought was wrong or foolish and that he had told me to begin with I couldn't do . . . I should go ahead and do it, because I would never be satisfied unless I did. As he said, "I can tell you what's going to happen, but if you don't do it you will never be satisfied."

Jane stands apart from the teenage culture and rarely comments on it. Most of her contacts seem to be with younger children or adults. She is concerned about conformity and hopes she will not be like many women she knows who get to be "all the same as they get older." According to her analysis, "They force each other to be like the others are."

Although she has noted a certain lack of openness in the young, she feels there is actually more prejudice among older people:

> I can't get over how narrow-minded some people are, and how small their world is and how small they

> think. What the next door neighbor is doing--that's their world. I can't see that. As long as there are prejudices, there are going to be men like Hitler to make use of them.

She later continued:

> I think the next generation, possibly, is the generation that's going to iron out some of the racial problems in the U.S. 'cause I think kids that are coming to school now are much more liberal than their parents. I know I am. Once we were sitting at a drive-in, eating, and the people next to us happened--well, she happened to be white and he was colored. And they had this child, and my parents made a comment like, "What do you think of something like that?" You know, I said, "I don't see how it makes any difference. It's really none of your business. It's their business. If they're happy, that's all that matters." My grandfather feels the same way about it.

The Aesthetic Orientation: Jane has always spent a great deal of time alone and although she sees herself as practical and down to earth, she also is given to flights of fancy. While discussing one of her favorite reading areas, science fiction, she remarked that it often deals with more interesting topics than other types of fiction:

> No matter how good a mind you have as far as imagination is concerned, unless you write about something people care to read about, it's all wasted. People are at their best when they write science fiction. Another reason that I like to read these books is that here is something you can get involved in, yet it doesn't tell you what to think. You can picture it in your own way. I don't like a book with a lot of pictures because I'd rather picture it in my own mind the way I want it.

Jane sees a relationship between man and nature: "As we go along, I see trees go by and I notice how much a tree is like a person--straight and tall and each an individual." Just being alone outdoors is a delight to her: "I'll go into the backyard and read and daydream. It gives me a magical feeling."

She particularly likes animals and sees each one as beautiful--just as trees are and people are. "There's something beautiful about every person. If you look, you can see something beautiful in each person. Looking at beauty is an open feeling; it fills you with awe, but it is also comforting."

Sense of Destiny: Jane, despite her introversion and occasional moodiness, seems to be able to live with her inner conflicts. As one interviewer commented, "She can, with a remarkably clean bill of mental health, turn her considerable energies to the world without rather than dwell on the world within." She feels that people should take responsibility toward the world in which they live and she plans to make a contribution, if possible. Her emphasis, as she sees this developing, will be on people. As we have noted, she has considered politics and the Peace Corps as two ways of making the necessary impact and fulfilling her responsibilities as a human being. This desire to make a difference in the world has been hers for a long time: "My philosophy does not change so much--it just expands. When I look back over the years I see pretty much the same kind of person."

Jane also feels that there is a change taking place in human beings, an evolutionary groundswell that may change their destinies. As she says, "I think that people don't know what they can really do until they're pushed into doing it. Think how much genius people actually have when they need it."

Walt Whitman, "The Open Road," Leaves of Grass

"From this hour I ordain myself loos'd of limits and imaginary lines,
Going where I list, my own master total and absolute,
Listening to others, considering well what they say,

Pausing, searching, receiving, contemplating,
Gently, but with undeniable will, divesting myself of the holds that would hold me.

I inhale great draughts of space,
The east and the west are mine, and the north and the south are mine.
I am larger, better than I thought,
I did not know I held so much goodness. . . ."

VI. CASE HISTORIES: A STUDY OF LIFE STYLES

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VII. EPILOGUE*

Able young people are particularly responsive to images that present the more noble and effective styles of life and the great blazing hopes of mankind. They are aware of the circumambient "environment of change" and many seem to have what Tillich called the "courage to be an individual" and the desire to define themselves. Above all they want life to be worth living. But they are not sure of values or directions or how best to live their lives. Some, however, are beginning to realize that at its center life must have meaning and each individual must consciously search for this in his own distinctive way. The most mature have come to recognize a personal responsibility for their lives and the wisest of these know that their ideas of a future self will give this emerging self its form. They realize that this image can only be fashioned out of self-awareness and knowledge of possibilities. Thus some students, in common with the great philosophers, have chosen as the ideal direction of growth the route which helps them to find out who and what they are, to grasp more completely the meaning of others, and to sense more clearly the nature and purpose of life itself. It is this straining toward maturity of capacity and commitment which I have called the creative intellectual style and which I have described as the most advanced level of the three types of motivational emphases which I have studied in gifted adolescents.

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*This is not to be taken as a summary chapter for this third report but rather as a statement which goes beyond the present study to recommend dramatic and wide-reaching educational change. The views expressed are my own but, as you will see, also reflect the felt needs and recommendations of the students I have worked with and the attitudes, beliefs and theories of the humanistic psychologists and social philosophers who have influenced me so strongly. These latter views are reflected in my reviews of the literature in each of the three reports entitled THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS.

In its mature form the creative intellectual style is purposeful, individualistic, altruistic and intensive. Although there is no definition of "full humanity," there are many descriptions of the personal qualities that can be called self-actualizing--the capacity for commitment, zest, exuberance and passion. The life pattern becomes one of creative expansion with the intellect reflecting upon itself and continually evolving through a process of growth which Allport has called "propriate striving." In such self-actualizing growth there is investment in self-improvement and self-direction and, as maturity increases, there is an awareness of the social context. This is not only an awareness of how other human beings compose their worlds, but also a wholehearted interest in helping others. Thus this search for deep and accurate self-knowledge is seen as essential for ethical behavior, and both the search for self and an ethical stance are held to be requirements for successful living in a democracy. The promise that each sees for himself and others becomes his preamble of freedom. As William James said, freedom lies in keeping the "image of what one wants uppermost."

Our educational patterns have much to do with whether or not these self-actualizing tendencies and "propriate strivings" will flourish. The very qualities that make each of us distinctly human--reason and imagination--make self-actualization possible; but not inevitable. Each young person by his very humanness is being impelled in these directions and those whose reason and imagination are most highly developed, the creative intellectuals, respond most strongly to these inner forces. They have the rational powers necessary for continuing growth and the talent for using this in original ways. They have more than a little genius for thinking creatively and prophetically about their lives and for taking charge of their destinies. And increasingly these more committed young people are showing a willingness to work for the greatest possible fulfillment of all human beings.

But as yet there is little provision in our schools for the development of these creative and intellectual qualities in young Americans. As a result, few sustain the motivation for creative thinking about their lives over any extended period of time; most relinquish their destinies to fate. Some live out their lives in haphazard and accidental ways while others manage and cope but do not plan and create. Too many forget that they have the power and responsibility to choose and that the good life is more possible when they make their decisions wisely and consciously. They seem to be unaware that the question is not whether or not the future is ours to shape but rather how we will shape it. They have not learned that as they evolve psychically--as mind and spirit become more important--they will suffer less often from what Loren Eiseley has called, "the dark future of some ill-considered thought."

In recent years as the Peace Corps and other pro-social activities have become increasingly visible, it becomes apparent that a large number of our young people have immense gifts in the human realm. However, the opportunities are limited and many of these talents flourish only fitfully or not at all. At the present time our schools and our society do not provide a setting appropriate for the fullest human evolution in intellectual and spiritual terms. If we are to have any confidence that a given student--even one with great ability--is to actualize his potential, we must transform our educational patterns. Certainly Nietzche was right when he said that we should stop letting our "existence" be a "thoughtless accident." We must discard the old, ineffectual routines and begin to educate for fulfillment and self-actualization.

Dramatic change in institutions such as the schools can only occur when society is reaching a turning point, when dissatisfaction with the existing order is high and becomes vocal. At present many of our youth are questioning accepted values. Affluence and a welter of possessions appeal indefinitely to only the emotionally immature or the economically impoverished among our youth. There is a growing consensus among the most thoughtful young people that man is not just an appetite or a war-machine but that he is a being with a mission. As Archibald MacLeish noted, "We may be drowning in things--but the best of our young people like it even less than we do." Similarly there is a loss of faith in technology, particularly as youth sees the machine regimenting human beings and standing between them and meaningful social, emotional and intellectual interaction. At the very time that universal prosperity becomes possible and the machine promises to lift the burden of physical toil from man's shoulders some of the more thoughtful adolescents are discontented and at times shrilly critical of society. Others have grown apathetic and alienated.* The search is for more humanizing values than those that come simply from economic abundance. Technology must be used for truly human purposes and not merely to bolster the GNP and maintain an ever more precarious balance of power.

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*There are a few who have resorted to violence as well--at times self-directed and suicidal in intent and more uncommonly aimed at destroying others. Don Saxon's recurrent daydream represents the latter impulse. These sensitive and intelligent young people are early aware of the tragedies inherent in the human situation. As adolescents, Pablo Casals and Bertrand Russell despaired and decided suicide was the only alternative; yet both have found happiness through great creative intellectual achievements and, even more, through working for the human cause and for peace at a world level. Buckminster Fuller's pattern was similar--first the strong drive toward suicide and now the crusader for world peace and disarmament. They could have been permanently defeated but mysteriously this did not happen. The successful creative intellectuals, those who most nearly approach self-actualization, turn inward to personal resources--fall back upon themselves. They learn the art of adequate experiencing--to use all experiences, even the deviations as opportunities to grow; the hardships as well as the triumphs can be beneficent.

We must invent a future infinitely better than our present--or alienation, self-destruction and social nihilism will continue at an ever more accelerated rate. The crises of contemporary society and modern man call for an understanding by each person of not only himself but of his fellow beings and at a much higher level than before. What prevents our imaginations from producing a better society peopled with happier, more rational and altruistic human beings?

It may well be that imbedded in the practical philosophy out of which technology springs there is a deep hostility to utopian thought and to the very concept of "inventing a future." Visions of a more human world, more human ways of living and more human ways of teaching our youth seem to contradict the very trend that threatens to mechanize our lives--the trend that has put us on wheels and in front of the TV set. Technology concerns itself with only the instrumental question of how to get things done but does not give long and careful thought as to whether what we are about to do should be done. Is it wise for advertisers to sponsor pre-teen sex rites in order to sell mini-bras to pre-pubescent girls? Is it desirable for the manufacturers of baby food, in their perennially expansive mood, to show no concern for birth control? Is it still thinkable--a viable alternative--to stockpile nuclear weapons for a war of mega-kill proportions and simultaneously to scuttle the United Nations?

The most able and dedicated youth react to these cynical, opportunistic aspects of our social order and the mindlessness of mass society with distaste and even revulsion. Where can they turn to see principled belief in action? Inspiration and direction for a better life rarely come from the mass media. National leaders, particularly those in the military-industrial complex, offer little that is morally exalting. It is difficult to be uplifted by a corporation vice president's conviction for price fixing and the typical businessman's response that the only thing wrong with such connivance was being "stupid enough to be caught." It is short of inspirational to contemplate an automotive firm's disregard for public safety and its self-protective response of investigating the personal life of the investigator.

The schools, although certainly less corrupt, are similarly negligent in supplying a climate and patterns for growth motivation--in intellectual, affective and social realms. Tremendous sums of money are now being spent on "deficiency" education but rarely are energies or funds turned toward education for "being and becoming." The new ethic, concern for the deprived, is a version of the perennial American interest in the underdog, and--as such--is laudatory. We undoubtedly need a great task force to right the wronged, straighten the warped and rectify injustice generally, but the essential flaw is that we tell ourselves there is neither time nor money for anything else. We congratulate ourselves that we are realistic and that we know our limitations. We cannot raise the ceilings until the floor has been repaired. And thus we excuse ourselves from working toward fulfillment education for those who, because they have outgrown the "need level," are ready for something more. For most able youth, we continue a "deficiency diet," adopting the easiest and cheapest strategies of teaching and guidance. Classes are too large. Teachers' days are too long. We present the grade level text which was designed for the "average" child and teach fragmentary units in routine and repetitive ways. There are only enough hours in the day for a desperate running "in place." However, this does not prevent the school's encroachment on evening hours and, by the edict of assignment, filling this time with

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*In this chapter I am particularly concerned with able adolescents. However, all young people can profit from education that does more than make up losses.

homework that is as routine and repetitive as the classroom activities. Obviously we have not learned to take our verbal formulations of educational aims--teaching young people to think and care at appropriate levels and in appropriate ways--seriously, or we would provide both deficiency and fulfillment education.

Fortunately, there is another voice that participates in this dialogue. It articulates the views of the early Greeks, the great Renaissance thinkers and America's Founding Fathers and nineteenth century transcendentalists.* This is the voice that appeals to hopes and dreams and carries a vision of the future. It speaks for the humanistic philosophers, educators and all great teachers of the past and present. The message, when we choose to listen, is strong and clear--telling us forcefully that we have the values upon which to build. If we take the ideal of self-realization seriously then we can devise a more rational and humane future, we can implement our aims in education, and we can encourage and allow children to grow toward "full humanity." We can replace images of man--alienated and mechanized--by new images, goals and visions of self-perfection. Our society at large can and must commit itself to the attainment of the greatest possible fulfillment for its members. Such a revision of educational patterns could well produce the kind of buoyancy and vitality in many young people that is now the privilege of the few and it could forestall the feelings of alienation, facelessness and valuelessness that overwhelm so many of our able youth.

The skeptical reader will ask at this point how I can have the temerity to suggest that education for self-actualization will work, if by some miracle we put it into effect. I can only respond that such education is not only possible but practical. My research has convinced me that in healthy youth the urge to grow is more basic than the desire to be acted upon and to give in to surrounding pressure. Maslow is not only right when he says that the major problem of our time is valuelessness but also when he adds that we can do something to change the state of affairs. There is an openness in youth and a readiness for growth that suggests that appropriate changes will be successful. The very failure of the mass culture, the old patterns of education and the outdated images leaves a great and unfilled need, a vacuum which is impatient for a philosophy of affirmation. Youth senses the deep ambivalence and the tacit hypocrisies which stain the present moral fiber, but many continue to seek a more positive identity. Our experiment* has shown how quickly and willingly students respond to more creative and expansive ways of thinking about themselves and the world. We found that their attitudes and values readily can change toward greater self-actualization, quite probably because this direction of growth is compatible with the students' inclinations and with their capacities for self-transcendence.

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*Fromm believes that the highest human value is the capacity man has for transcendence, for a sense of oneness with the world--not too different, he says, from the belief in God expressed by certain Christian, Jewish and Moslem mystics. He sees common humanistic themes in many traditions of thought--Buddhism, the teachings of Christ, the great ideas espoused in the Renaissance and the Enlightenment.

That this new education which we seek must stress and foster self-actualization seems incontestable. Throughout the ages, the great philosophical and religious leaders have been agreed on the human need for personal integration and attainment of selfhood. The aims of education to which

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*I refer here to changes in attitudes, interests and values noted after an hour-a-day, five-month exposure to reading, films and discussions which stressed "being and becoming." (For a detailed discussion, read Report II, THE CREATIVE INTELLECTUAL STYLE IN GIFTED ADOLESCENTS.) I want to make it clear that I feel this program was neither intensive nor extended enough. Developing a sense of identity and a private cosmology is a crucial task for young adolescents. They need time allowances in the curriculum for these philosophy seminars that will extend over several years, not a few months.

I referred earlier--teaching the young to think and care--are generally accepted throughout the educational establishment. And, as the case studies and our prior reports make dramatically clear, able students concur that these are desirable goals for instruction, but they would add ruefully that seldom do the schools do anything. Students are rarely encouraged to think critically or originally nor are they helped to develop the skills they need for this. The neglect of human relations is even more apparent--and compassion is an afterthought in most school programs.

It has seemed easier to list obstacles to such transcendent growth than to propose conditions for its emergence. However, we can and must take the aims that urge education for self-actualization seriously. Youth has vast potential for higher order functioning. In the very existence of these talents lies the promise that appropriate education will call them forth.

This new education will not succeed unless each child is given and is willing to assume responsibility for his own education. For it to be effective there must be freedom as well as challenge, and an improved content and methodology. Values can no longer be disregarded. Important issues must be discussed and better ways to solve problems and to learn must be taught. Fortunately, there is a precedent for such self-actualizing education. The rare teacher who is both inspired and inspiring has always been able to release or evoke capacities for personal growth in his or her students. And, as I have pointed out (Chapter II), almost all effectively creative and humanely concerned people have had certain components in their education and their early environment which are different from what we offer in our present educational system. Each has grown up in a situation that extended freedom and acceptance and was responsive as well. In addition, each has had an environment that has been challenging and evocative. Admittedly, the paths to fulfillment were different. Considering the unique potentials of these outstanding men and women, this is an obvious and essential condition. Just as there can be no final definition for self-actualization, there can be no single route that leads to such maximum growth.

Our schools, as we have seen, do not schedule philosophy seminars nor do they provide these multiple and alternative routes from which the young can make selections appropriate to their own style and interests. Instead of offering such a responsive and evocative environment tailored to each individual's needs, the schools provide a "deficiency" education which tends to constrict and socialize. The rules are simple and well known. Too often they are the blueprints for a fragile house of cards rather than for the marble halls of learning or the open forum of Socratic dialogue. The travesty is that school learning which forces acquiesence is not valued even by those who apparently accept it in its present form. The hypocrisy of the situation has made cheating endemic, the more opportunistic social leaders play the game and often "beat the system." The conforming and conscientious studious repress their independent thoughts, master the texts, avoid wide reading, and come out on top by following the rules.

Although there is a place in our high schools for the socially oriented and the studious, the rational and altruistic creative intellectuals rarely flourish in such settings. By their very difference from the mass, they invite censure and by their desires to learn at advanced levels, at accelerated speeds and in their own style they find the typical curriculum and classroom offer little. Choices are too limited, the independence they want is not available, and their honest quest for knowledge is an irritant to the over-worked staff. Yet we cannot expect these most promising young people to educate themselves. They do not yet have the cultural resources and the rich variety of internal choices that the truly mature adult can turn to at will. They literally do not know the possibilities. They need to have their repertoires enlarged and their values clarified before they can take responsibility for their education. Guidance of an intellectual and philosophical nature is needed. It is vital that these young people be brought into significant discussions and dialogues. There must be opportunities for them to discuss crucial problems with not only their peers but also to engage in dialogue--or to meet more formally through lectures, tape recordings, films and books--the great men and women of the age. An out-of-school learning center, open to people of all ages, but with special services for the adolescent, could supply such a flexible and challenging environment and make education more truly related to life and the growth forces. Who would provide leadership for such a center? A certain number of individuals have always withstood the blandishments and pressures of society. These individuals--often artists, philosophers and scientists--do not succumb to the mass culture or the socialization of the schools, but they also have not been content with withdrawal into privatism, i.e., to be outsiders. They have, perhaps because of inner resources or because of the special environment in which they have lived, triumphed over the odds. They have not defected from their work nor withdrawn from society. It is from this group--those who have suffered the least warping and stunting and thus are most nearly mature and self-activating--that we should choose leaders for this movement to constructively change educational patterns and to work in the learning centers.

Among these potential models, leaders and guides at least three different kinds of individuals will be required to supply the needs of the young people who will come to the learning centers:

(1) Social philosophers--and especially their theories and ideas--must be made available.

(2) Students must have contact with a variety of scholars, artists and scientists so that they can be abreast of the intellectual and aesthetic life of our era and also in order that they can learn directly about the process of scholarship, scientific research and aesthetic expression. Exposure can also come through all forms of media--the products of the creative endeavors (plays, art, music, scientific displays, libraries, etc.)

(3) Counselor-consultants will be needed to help students find appropriate methods of search, ideas to pursue, materials to work with and adults who can serve as models. They will also serve as discussion leaders for seminars.

Such changes will necessitate an appraisal of ways to foster individual growth in its full range of diversity and at the same time require a study of the present and the future--the dimensions of the modern world. Subject matter in the public schools and the disciplines in the colleges--their supporting theories and facts--will have to be replaced by important problems and issues, particularly those that deal with the human condition, and draw their solutions from all areas of knowledge. Beyond this, I have already expressed my view that the individual who has achieved a unifying philosophy of life--an integrating theme to live by--leads a better life than the individual who cannot find meaning. It is our task to change education in such ways that each student can become creatively purposive and constructively hopeful. The integrating theme chosen may be an aesthetic ordering of experience, scientific discovery or altruistic endeavors. Of these integrations it is the latter--what could well be called social creativity--that is of supreme importance. The truly significant core of human nature is the capacity for self-extension and self-transcendence. Only as this is developed can love and reason flourish and individuals learn to live together more cooperatively and gracefully.

But this kind of utopian vision calls for the utmost courage in an age when it is easier to register despair or resignation than to take action. Yet, it is only by taking a stand for creative change and developing a commitment to a better world that our children can be helped to move toward self-actualization.

APPENDIX

TABLE A

MEAN SCORES ON THE *OMNIBUS PERSONALITY INVENTORY*[a] FOR THE 1961 GROUP[b] COMPARED TO STUDENTS IN PHASE II (1964)

	1961 GROUP	1964 PHASE II				
		Exp.	Cont.	Total	Exp. Girls	Exp. Boys
Originality	46.15	49.69*	47.82*	48.85	51.00	48.00
Complexity	50.32	55.94*	55.44*	55.71*	56.74*	54.90*
Estheticism	49.08	49.98	49.64	49.83	54.19*	44.57*
Thinking Introversion	48.19	50.40	47.62	49.15	52.67*	47.48

[a] Comparison has not been made on the *Theoretical Orientation* scale because no data are available for the 1961 group.

[b] Includes all 10th, 11th, and 12th grade students in the Lansing public schools with IQ's above 120 during the 1960-61 school year. Thus the Phase II group (1963-64 testing), restricted to 10th grade students, is contrasted with a somewhat older population which would tend to score higher than the Phase II group if age were the only differentiating variable.

*Indicates significance at the .05 confidence level when the designated 1964 scores are compared with 1961 group data. Differences were measured with a one-tailed *t*.

RESULTS

Table A compares Phase II testing data (1964) with data (1961) on a group of superior students who had no exposure, either direct or indirect, to the experimental curriculum. Only students from the two groups with IQ's above 120 were compared. Means for the experimental (direct exposure) group were significantly higher than means for the unexposed group on the *Originality* and *Complexity* scales and approached the significance level ($p = .07$) on the *Thinking Introversion* scale. The control (indirect exposure) group scored significantly higher than the unexposed group on the *Complexity* scale. Total Phase II results (combined experimental and control groups) were significantly higher on the *Originality* and *Complexity* scales.

Of special interest were the experimental girls who were significantly higher in *Originality*, *Complexity*, *Thinking Introversion*, and *Estheticism*. In contrast, experimental boys were significantly higher than the unexposed group only on *Complexity*; experimental boys scored significantly lower on *Estheticism*. In considering the significance of the *Estheticism* results, it should be noted that the differences are probably due to comparing boys and girls separately with a group undifferentiated for sex; when the experimental group as a whole is compared to the unexposed group, no significant difference occurs.